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ABSTRACT

This collection consists of 11 conference papers on issues pertaining to education of talented and gifted children; 6 are from "general interest" sessions and 5 are from "special interest" sessions. The general interest papers are primarily theoretical in focus. Titles include: Julian C. Stanley's "Finding Intellectually Talented Youths and Helping Them Educationally," a historical survey of the gifted child movement culminating in a description of the author's study of mathematically precocious youth; Gwen Curran's "Creativity through Dance"; Alexinia Baldwin's "Realities, Reconciliation, Resolutions for the Gifted Child from Different Cultures"; Dorothy Sisk's "Leadership as It Relates to Gifted Education"; June Maker's "Integrating Content and Process in the Teaching of Gifted Students"; and Michael Posner's "What Is It to Be an Expert" (a study correlating expertise with semantic memory). The special interest papers focus on more practical topics. These include: Jeri Deckard's "Succeeding with Your School: Advocacy for Gifted Children," a brief guide to parental involvement; Robert Sylwester's "Brain Research and the Education of TAG Students"; Jayasri Ghosh's report on "Citizen Creativity through a Community-Based Gifted Program" (Tacoma, Washington); Joan Hladky's descriptive report on "Education of Talented and Gifted Elementary, Junior High, and High School Students in a Small School District" (Pleasant Hill, Oregon); and Mildred Robeck's guide to "Identification and Intervention in Early Childhood." (TE)

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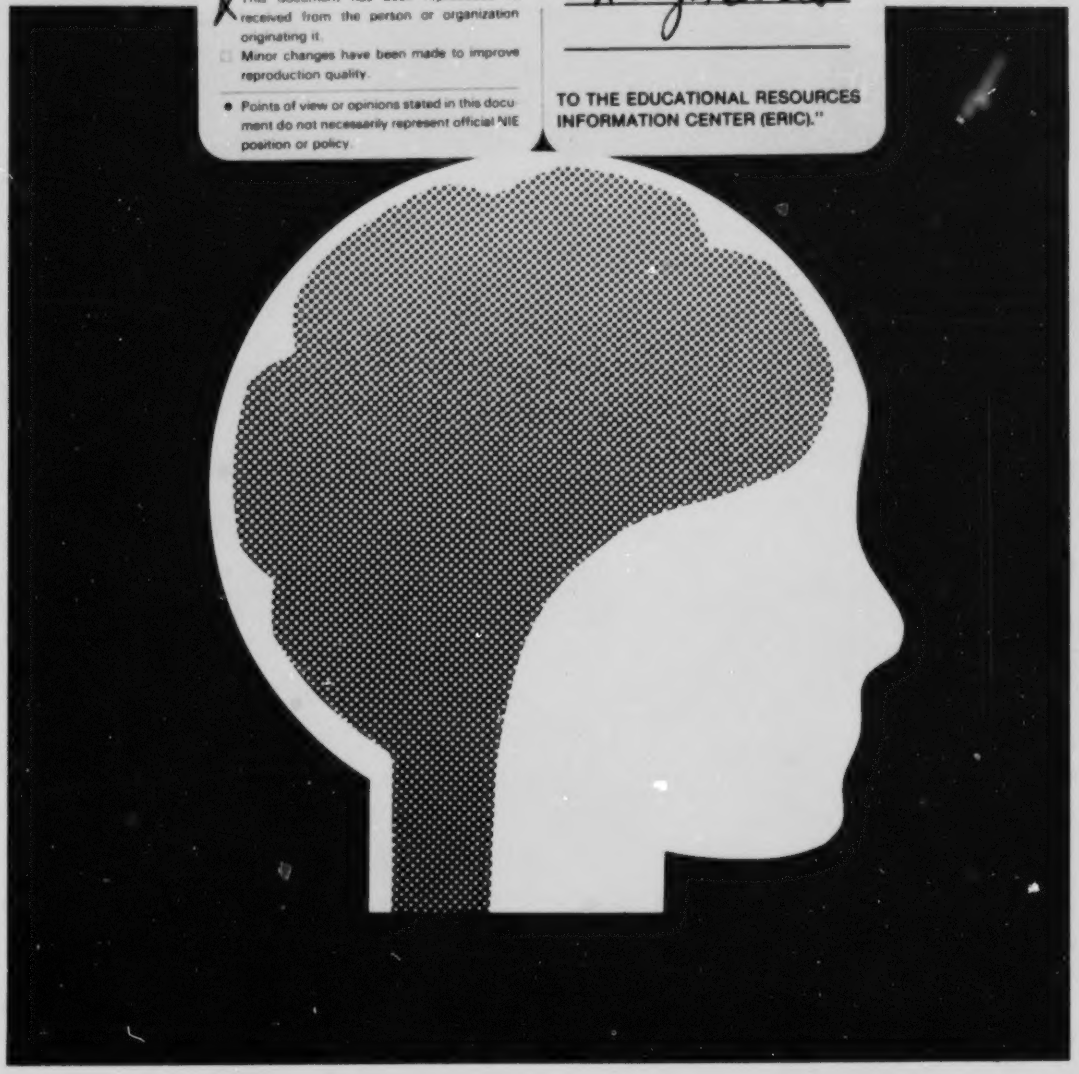

EDUCATION FOR THE GIFTED: PATTERNS FOR THE FUTURE

College of Education · University of Oregon
July 25, 26, 27, 1983

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PROCEEDINGS

EDUCATION FOR THE GIFTED: PATTERNS FOR THE FUTURE

Fourth Annual Summer Conference

College of Education

University of Oregon

Held at

HILTON HOTEL AND CONVENTION CENTER

Eugene, Oregon

July 25-27, 1983

PREFACE

The College of Education at the University of Oregon is pleased to offer this printed proceedings of its Fourth Annual Summer Conference--Education for the Gifted: Patterns for the Future held at the Hilton Hotel and Convention Center in Eugene, Oregon, July 25-27, 1983.

The authors of these papers were invited to make presentations at this conference because of their acknowledged scholarly or professional competence in the education of gifted and talented students. The findings, views, or opinions expressed by those authors, however, are entirely their own and do not necessarily represent those of the College of Education or the University of Oregon.

For the reader's ease of reference, the presenters were asked to follow a uniform style for organization and layout of their papers. To meet our publication deadline and control printing costs, the papers are presented exactly as they were received; not even the pagination was changed. While all the major presenters submitted papers for inclusion in the published proceedings, some of the special interest session presenters were unable to make the printing deadline, so their papers were not included.

Additional copies of the proceedings may be obtained by sending $5.00 (prepaid or purchase order) to Summer Conferences, Office of the Dean, College of Education, University of Oregon, Eugene, Oregon 97403. Checks should be made payable to Summer Conferences.

Fay B. Haisley
Chair
Conference Program Committee

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Finding Intellectually Talented Youths and Helping Them Educationally

Julian C. Stanley, Director
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My interest in general intellectual talent was kindled by a course in tests and measurements at the University of Georgia during the summer of 1938. At that time I was a barely 20-year-old veteran of a year of teaching in as nearly a blackboard-jungle high school as Atlanta could provide. Much of that summer course consisted of the students' taking a number of intelligence tests, notably the Otis, Toops' Ohio State University Psychological Test, and the Miller Group Test, one-third of which later grew to become the Miller Analogies Test. For a year or so I administered the Otis to everyone who could be persuaded to take it, including my students, my parents, my girl friends, and my sister's boy friends. I even went on to administer a standardized chemistry achievement test to my high school chemistry class. This testing was heady experience, but other concerns such as the coming world war took over. Not until 1958 did my interest in gifted children resurface, but then it gave way to a Fulbright year abroad devoted to test theory. As we shall see later, my major efforts on behalf of intellectually talented youth began in 1971. Before discussing them, however, we need a brief review of the origins of the gifted-child movement.

Terman Starts the Gifted-Child Movement

In 1921 in California, systematic seeking for large numbers of intellectually talented youths began with Terman's somewhat unfortunately titled Genetic Studies of Genius. His 1528 school-age subjects, born on the average in 1910, are less numerous today, but as recently as 1972 the survivors were still being followed. From this classic descriptive longitudinal study has come empirical refutation of most myths about intellectually talented youths. They do not tend to die early, peter out, burn out, become neurotic or psychotic, or fail in their professional and personal lives.

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*Editorial assistance was provided by Barbara S. K. Stanley and Camilla Persson Benbow. Parts of this paper appeared in somewhat different form in Julian C. Stanley, Identification of intellectual talent, in William B. Schrader (Ed.), Measurement, guidance, and program improvement, Jossey-Bass, San Francisco, 1982, pp. 97-109.

Although the extent and quality of the contributions of Terman's "geniuses" (or Termites, as some preferred to call themselves) are still being debated, even in the 1960 survey their vocational achievements were impressive. While the group averaged only 50 years of age, according to Oden (1968) "Three men had been elected to the National Academy of Sciences and two to the American Philosophical Society. [Forty-six] are included in . . . Who's Who in America, 10 in The Dictionary of American Scholars, and 81 in American Men of Science. . . . Some 2500 articles and papers and more than 200 books and monographs in the sciences, arts, and humanities have been published and at least 350 patents granted. Miscellaneous articles (technical, travel, hobby, etc.) number around 350. Other publications include close to 400 short stories, 55 essays and critiques, and a small amount of poetry and several musical compositions. Not included in the foregoing account are the professional output of editors and journalists or the many radio, TV and motion picture scripts that have been authored."

The persistent reporting of findings in four volumes, a monograph, and a number of articles[1] did much to quell the worst fears of the uninformed or prejudiced. Being almost solely a non-manipulative study of the gifted child in his or her native habitat, however, this great work had little to say, except incidentally, about educational facilitation of high-IQ students. Also, because during those early days Terman dealt primarily with a global measure of intellectual ability, he told us little about specific intellectual talents and how they might be useful educationally. This led teachers to group children for instruction in many school subjects by IQ, rather than on the basis of whatever combination of abilities best predicted success in a given course. That may explain a considerable part of the failure of homogeneous grouping, ability grouping, and streaming. For example, grouping on IQ reduces the variability of mathematical reasoning ability within the group far less than grouping on mathematical reasoning ability itself does.

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[1] The chief publications thus far are Terman et al. (1925), Cox (1926), Burks, Stoddard, and Terman (1930), Terman and Oden (1947, 1959), Oden (1968), P. Sears and Barbee (1977), and R. Sears (1977).

Others Give the Movement Momentum

Concurrently with Terman, but at Teachers College of Columbia University in New York rather than Stanford University across the country, Hollingworth (1942) both identified and facilitated educationally a considerable number of extremely high-IQ children. Terman worked for the most part from IQ 140 up, whereas Hollingworth preferred at least 180. Her methods were less survey-like and more personal than his. Despite her untimely death in 1939 at age 53, she has had a continuing impact on the education of the gifted. Her emphases on special schools for them and moderate educational acceleration affected the New York City area, especially during the 1920's and 1930's, and quite a few other large cities. Like Terman, however, she emphasized the single-score Binet-type IQ for identification and educational placement.

A third towering figure was Pressey (1949). He and others sought freedom for intellectually able youths to traverse the school system from kindergarten through graduate school faster than the usual age-in-grade Carnegie-Unit lock step permitted. Going beyond Terman and Hollingworth, Pressey showed that the presumed evils of educational acceleration were about as imaginary as had been those alleged for having a high IQ.

Many others have worked on some aspect of great intellectual ability, from Galton (1869) to the present, but during the 50 years from 1921 until 1971 Terman's research-oriented talent search remained virtually unique. It did, however, inspire a number of states—notably, California—to search systematically for high-IQ youths and provide them some special provisions, chiefly a modest degree of educational enrichment rather than acceleration.

SMPY Begins

In 1971 a fortunate combination of events led to my securing a generous grant from the newly formed Spencer Foundation of Chicago. This provided a decade of support, still continuing, for ever-growing talent searches among junior high school students. Unlike Terman's, however, these searches were conceived from the start as a means of finding youths with special talents who could be helped to move ahead better and faster educationally. Terman and Pressey had provided powerful ammunition against most of the worst stereotypes; strong, determined educational facilitation was needed. It is not possible, however, to facilitate unknown or imprecisely identified youths. Efficient searching was clearly the initial step, necessary but not in itself sufficient.

The first search was conducted in March of 1972 with 450 seventh- and eighth-graders, chiefly from the Baltimore area (Stanley, Keating, and Fox, 1974). By January of 1982 the ninth search involved nearly 16,000 seventh-graders from six Middle Atlantic states and the District of Columbia, plus some 22,000 students in the Southeast and West under the auspices of Duke University and Arizona State University, respectively. During the school year 1982-83 all states in the U.S.A. were firmly in the talent-search network. They were also canvassed for ultra-high-level talent. The searching has grown large and complicated, but effective because of the accumulation of relevant experience during the decade. As might be expected, facilitation efforts have also been expanded greatly.

From the start, the primary identifying instrument used by my Study of Mathematically Precocious Youth (SMPY) was the College Board's Scholastic Aptitude Test (SAT). At first chiefly the mathematical part (SAT-M) was administered, because SMPY wanted mainly to find and help young students who reason extremely well mathematically. Soon, however, values of the verbal part (SAT-V) became apparent. Searches from the seventh, in 1980, onward are as much for verbal reading and reasoning ability as for mathematical reasoning ability. Even the Test of Standard Written English (TSWE) has proved useful for determining readiness for foreign-language and writing courses.

Fears that youths 11-13 years old would find the SAT too difficult have not proven true, probably mainly because we restrict participation in the talent search to persons who on achievement-test batteries administered by their schools score in the top 3 percent of their age group verbally, mathematically, or overall. Thus only about 1 in 20 seventh-graders or youths in higher grades who are not yet 13 years old qualify for the talent search. The more able of these tend to be the ones who actually take the SAT, so for the most part the Johns Hopkins Center for the Advancement of Academically Talented Youth (CTY), which now conducts talent searches from Virginia to Maine, deals with the top 1 in 30 or so youths. Interest focuses on those who score at least 500 on SAT-M or 430 on SAT-V. By comparison, the average college-bound twelfth-grade male scores 493 and 431, respectively. To do that well five years earlier than these high-school seniors represents considerable intellectual precocity and, other factors being favorable, potentiality for accelerating one's progress in relevant school subjects.

How do eligible students learn of CTY's annual talent search? Full explanatory materials concerning it are sent each fall to several different educators at every public, parochial, and independent school in the region from Virginia to Maine that has a seventh grade. Also, extensive news coverage is sought in this geographical area. The student need learn from his or her school only about the required upper-3% score on a relevant part of an in-school achievement-test battery. The eligible student then registers directly with CTY, which in turn sends information about preparing to take the SAT in January, as well as much other material.

Scores from the January SAT testing come to CTY via its code number, at which time (usually, mid- to late February) information concerning summer programs is sent to all the examinees whose SAT score(s) qualify them for such fast-paced academically oriented experiences. For example, of the 15,479 participants in CTY's January of 1983 talent search, about 10 percent scored high enough on SAT-M to become eligible to attend the concentrated three-week residential summer mathematics, biology, chemistry, physics, computer science, or quantitative economics program.

The "700-800M Before Age 13" Group

In the fall of 1980 SMPY started a national search for youths who score at least 700 on SAT-M before their thirteenth birthday. Only 5 percent of college-bound twelfth-grade males score that high. We estimate that at a given time only 500 persons in the entire country do that well before age 13, making them in the top 1 in approximately 7000 of their age group. One seventieth of 1 percent mathematical reasoning ability holds promise of stellar academic performance, especially in the mathematical and physical sciences and engineering, all the way through the Ph.D. degree at a top-level university. This precious natural resource was seldom discovered before we went looking explicitly for it. In the words of Thomas Gray's "Elegy Written in a Country Churchyard," most youths of this quantitative caliber were "born to blush unseen, and waste their sweetness on the desert air" of elementary and junior high schools. At age 12 or 13 many of them could dispose of the usual four-and-one-half-year precalculus sequence from first-year algebra through analytic geometry well in three intensive summer weeks. Thus they are ready to take twelfth-grade Level BC Advanced Placement Program calculus when just eighth-graders, rather than Algebra 1 in the eighth or ninth grade. How much boredom and wasteful time-serving they were spared by being identified objectively by means of a well-known, secure instrument, SAT!

From November of 1980 through January of 1983 SMPY found about 250 "700-800M Before Age 13" youths. These came through CTY's January of 1981, 1982, and 1983 talent searches, Arizona State University's Project for the Study of Academic Precocity, Northwestern University's Midwest Talent Search, Duke University's Talent Identification Program (2 were reported to us in 1981), and SMPY's national publicity, chiefly in newspapers. As a response of the estimated 1250 population of such youths in that period this was gratifying. Even though some of the first 164 were found too late for admission to the 1981 and 1982 summer program's conducted by Johns Hopkins, Duke, and Arizona State, and despite the fact that several of them were already full-time college students and therefore not in need of those classes, about half of the group attended at least one residential three-week summer session and quite a few attended two, three, or even four sessions. SMPY continues its contacts with these remarkable young students as they strive to integrate their summer educational accomplishments with the curricula of the schools (mostly public ones) they attend across the United States.

This special search for youths who reason extremely well mathematically is conducted simply. Any interested youth may secure from a senior high school a copy of the official SAT practice booklet, entitled "Taking the SAT," study it, take the test, and if the score on SAT-M before his or her 13th birthday is at least 700, send a copy of the score report to SMPY, Department of Psychology, The Johns Hopkins University, Baltimore, Maryland 21218 (telephone 301-338-7087). An examinee may qualify up to age 13 years and 10 months with an 800; for every month or fraction of a month past the thirteenth birthday, 10 more points on SAT are required. For example, at 13 years and barely 3 months 730 or more is needed. Obviously, we are estimating that just prior to his or her thirteenth birthday the score would have been at least 700. This approximate, probably conservative procedure is needed because the SAT is not offered every month of the year, with an especially large hiatus during the summer and early fall.

The "630-800V Before Age 13" Group

CTY has launched a similar search for verbal superstars, those who before age 13 score at least 630 on SAT-V (630 is the 95th percentile of college-bound twelfth-grade males). Students may qualify, with a score of 800, even as old as 14 years and 5 months: 10 points beyond 630 for each month or fraction of a month after the thirteenth birthday. Score reports at that level should be sent to CTY, 305 Latrobe Hall, The Johns Hopkins University, Baltimore, Maryland 21218 (telephone 301-338-8427).

Sex Ratios

Even though extremely able mathematical reasoners are sought constantly across the country in many ways, the sex ratio for SAT-M scores of 700-800 before age 13 is approximately 15 boys for each girl found. For scores 600-800 the ratio is 4 to 1. For 500-800 it is 2 to 1. This sex imbalance is well established for the sixty-five thousand youths in our 10 talent searches thus far, but we do not know why it occurs.

Sex differences in mathematical reasoning ability as ascertained from SAT-M and similar tests are large enough to be important. In our opinion, they merit sound study to ascertain why they occur and what implications they might have for amelioration and instruction. It serves no useful purpose to deny the existence of such differences. The "what's" are rather clear, but of course the

"Whys" are not. Talent searches such as those described here provide excellent opportunities for much-needed research.[2]

Youths Who Reason Extremely Well Mechanically

As I have discussed elsewhere (Stanley, 1977), SAT-M was a virtually ideal instrument for the Study of Mathematically Precocious Youth in its formative stages. Young students who reasoned extremely well mathematically were found and then studied further in many ways. SAT-M, SAT-V, and TSWE continue to serve SMPY's and CTY's initial identification needs well. For finding more varieties of intellectual talent, however, a comprehensive aptitude-test battery might be developed by the College Board for use in the early years of junior high or middle schools. This might be administered to the intellectually ablest 5-10% of the age group in a search for persons highly apt in one or more of at least half a dozen valuable intellectual ways. Business, industry, and the professions need more than mathematical and verbal reasoning ability and knowledge of the mechanics of English expression.

For example, most of the nation's schools give little attention to the need for skilled maintainers of technical hardware whose excellence in mechanical reasoning, nonverbal reasoning, and spatial relationships has been utilized from the early years to make them highly proficient. Seldom do educators even know who the young students scoring extremely well in these respects are, or care much about their special abilities if they do. Many potentially splendid repairers of copying machines, computers, electric typewriters and word processors, television sets, electronic musical instruments, plumbing, and automobiles become routine service persons or mediocre engineers, instead. Often, pupils who perform poorly in academic subjects are shunted to the semi-skilled or skilled trades by default, rather than because they have the requisite aptitudes for them. The first step toward alleviating this unfortunate situation is to call attention to the large pool of mechanical, spatial, and nonverbal reasoning ability. This could probably be accomplished best by a comprehensive national talent search at the upper elementary or junior high school level. We at SMPY and CTY are devising ways to start that search.

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[2] Some other reports of SMPY's and CTY's research, development,and service are Keating (1976), Stanley, George, and Solano (1977, 1978), George, Cohn, and Stanley (1979), Fox, Brody, and Tobin (1980), Benbow and Stanley (in press), Benbow and Stanley (1980, 1981), Bartkovich and Mezynski (1981), Mezynski and Stanley (1980), Bartkovich and George (1980), Fox and Durden (1982), Solano (1979), Stanley (1979), and George (1979).

The Dire Need for Longitudinal Teaching Teams

Identifying intellectual talent objectively is the necessary condition, but hardly sufficient. As some wag quipped, "You can't major in IQ." Another said, "With a high IQ and fifty cents you can buy a cup of coffee." Mental potentiality is merely an aid to learning. The quality and extent of learning depend greatly on educational opportunities available to the would-be learner. In turn, such opportunities arise from the adaptability of school systems to the varieties and levels of intellectual talent they are meant to serve. Therein lies a serious problem that can be illustrated by quoting from Stanley (1980):

> While highly successful, SMPY's various [educationally facilitative] procedures occur only because the age-in-grade, Carnegie-unit lockstep of schools, both public and private, makes such heroic measures essential. If schools were organized differently, SMPY would not have been necessary—nor, indeed, would the present special provisions for most slow learners. In my opinion, age-grading for instruction in academic school subjects has crept insidiously upon us as we have moved from tutorial instruction and the one-room schoolhouse to the current situation. It needs to be reversed. But, regrettably, that will not be done easily or quickly.

My proposal in the area of mathematics is for a longitudinal teaching team that spans kindergarten through the 12th grade in a school system. Working from a mathematics learning center, the various members of this team would be responsible for meeting all the mathematics needs of all the students in the school system. The buck would stop with them. Every student would be helped to meet clearly stated, rather substantial criteria of mathematical competence. A few students would accomplish these early, perhaps by age 8; a few others would have to work hard until age 13 or so in order to attain the minima. Some students would proceed far beyond the minimum essentials; others would stop with them and devote their efforts thereafter to other subject matter.

Much of the instruction might still be in groups, but not age-graded ones. Attaining levels of achievement instead of A, B, C, grades would be stressed. All members of the longitudinal mathematics team would have to be highly competent, but some would specialize in helping slow learners and others in helping fast-moving students.

Obviously, this longitudinal-teaching-teams model could be applied to other subject matter areas such as language arts, social studies, science, and foreign languages. There might also be similar teams for the fine arts, music, drama, physical education, and social and emotional development. Attention to individual differences, both within areas and across areas, would be increased vastly.

I should certainly like to see a sizable public school system pioneer this project for at least 25 years. Because of problems that one can readily anticipate and many that one cannot, almost certainly this would be extremely difficult. I believe strongly, however, that some such plan is our only hope for the educational future of America's youths. All else will be sorry stop-gaps.

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SUCCEEDING WITH YOUR SCHOOL:
ADVOCACY FOR GIFTED CHILDREN

Jeri Deckard

Programs for gifted children are often initiated and budgetarily maintained through parental involvement and parent support groups.

Where Do We Begin

Oregon Association for Talented and Gifted through it's Parent-To-Parent Division is developing parent support chapters throughout the State of Oregon. These chapters, composed of parents; educators; administrators and involved community members, have as their goal the initiation or continuation and expansion of programs for talented and gifted children.

Where Do We Go From Here

Knowledge and training will help parents become the best advocates for gifted children. Parents need to know what information to acquire, what their rights are, what the rights of the child are, how they can actively participate in the education process, the overall functioning of the schools, how to create public awareness and how to influence the decision makers.

Each Parent-To-Parent Chapter sets goals for its area, provides leadership and training for its members. PTP has recently published a handbook for parents entitled Your Gifted Child: Masterpiece In The Making. This book is intended as a resource guide for parents both in terms of understanding giftedness and gifted education and in developing skills necessary for working effectively with the educational system.

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CREATIVITY THROUGH DANCE

by Gwen Curran
Head Teacher, Magnet Arts School - Director, Youth Dance Company, Eugene, Or.

Humans have danced since the beginning of time in celebration of life in all its aspects. As each tribe developed into a culture, the education of the young always included both organized and free dance experiences. Only within the modern western world have we put more emphasis upon a static, intellectual style of learning.

Both the rational and metaphoric minds must be educated. The right cerebral hemisphere provides the inventiveness, creativity and challenge to conformity needed to grow into a sensitive human being. Dance, as one of the non-verbal arts, allows the child to explore and define the world as he/she moves through that world. Dance provides the child with another mode of bringing the parts together and finding the universal whole.

Dance has three elements that provide the framework for creating movement experiences: Space, Time and Force. Space can be unlimited or restricted for the dancer, but always involves direction, level, range and shape of the movement in and through the space. The feeling of unlimited space can be felt by the student dancing alone in a park or playground versus the restrictions of a classroom with many other dancers. Different motor skills and space perceptions are necessary to feel comfortable in both settings. Most young children and beginning dancers will run and run through the space with no thought of how they are moving or what variations are possible. The dance leader must give them space problems to discover the variety of possible movements and the necessity of awareness for both safety and aesthetic reasons. In a large, open space ask the dancers to move quickly from one side of the room to the other. At least 90% of them will run! Ask them to do it again, but use a different movement. Now the variations will begin to appear. Through this process of elimination, the students will discover other ways of moving through the space without you programming their response. Now you can move to the exploration of levels by asking them to move through the space in a new way and add going down to the floor at least one time on their travel across the room. Have the dancers repeat this again before guiding them to movements which take them off the floor. Then combine the three levels, low, middle, high. Have half the group "perform" for the other half and you have finished your first lesson in the use of space. Build on this experience in the following dance periods by adding changes in direction and range. The repeated use of the terms "space", "level", "direction", and "range" will begin to register in the dancers' minds and a new vocabulary will be formed. Now the students need to deal with the element of force on its continuum from weak to strong. Using the skills already learned, guide the children through movements that feel heavy or light, soft or hard, flowing or jerky. As they become aware of the amount of force they use to move a hand or head or the whole body, they will add a new dimension to their movement knowledge. Time, as an element, is essential in all the arts, but most exciting when handled in a creative way by a skilled dancer. Fast and slow are obvious points of departure for the beginning dancer, but are still dealt with by the professional choreographer. Understanding of phrasing, accents and meters lead the dancer to a deeper awareness of the unlimited possibilities for dances which move with, through and around musical compositions. Dancers should also make their own sound for dance. Moving with no sound, the use of hands clapping, feet stamping or voice sounds are some of the endless possibilities. Body shapes are also vital to the dancer and actually combine the first three elements as we move across the performance stage. Isolated body movement combined with stretching, contracting and locomotor skills lead the new dancer to carving in space exciting and new shapes.

The elements of dance are learned in a spiral style. The dancer builds, always builds on the past experiences and never stops creating new movements.

Dance technique is gained through sweat and risk taking. The dancer must be continually challenged to look for alternatives. Artistic growth does not take place at the plateau of comfort. Growth can only happen when we experience discomfort or stress. Then the spirit searches for that solution which will bring harmony to body and mind.

Dance exploration brings students to an exciting level of risk-taking and thereby to the creative process. All artists use the creative process to produce paintings, plays, concertos, or ballets. Whether the artist works in isolation or in cooperation with a group, the process remains the same.

1. State the problem.
2. Select the materials.
3. Improvise.
4. Produce the art piece.
5. Evaluate.

With beginning dancers, the leader/educator will state the problem, select the materials, and guide the students through the frustrating improvisational period to production and critique. With experience, choreographers will emerge who want to take total control of a dance piece. Solo works are more common, but group work can be executed by beginning choreographers when guidance is provided by the teacher/dancer.

Dance is an ephemeral art. It is physically demanding for the student. Quality dance requires constant nurturing and continual practice for the dancer - who must possess talent, creativity, skill and dedication.

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BRAIN RESEARCH AND THE EDUCATION OF TAG STUDENTS

Robert Sylwester
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University of Oregon

Full many a gem of purest ray serene
The dark unfathomed caves of ocean bear;
Full many a flower is born to blush unseen,
and waste its sweetness on the desert air.
(Thomas Gray, "Elegy Written in a Country Churchyard")

We always live at the time we live and not at some other time, and only by extracting at each present time the full meaning of each present experience are we prepared for doing the same thing in the future. This is the only preparation that, in the long run, amounts to anything. (John Dewey, EXPERIENCE AND EDUCATION)

Learning is not merely a process of adding on to previous knowledge. Rather, it is a dynamic and continual mental reorganization that draws on maturation, prior experience, and language factors in its search for equilibration. (Jean Piaget)

Type A Behavior is a chronic, incessant struggle to achieve more and more in less and less time. It is characterized by a free-floating but extraordinarily well-rationalized hostility; by an overconcern for numbers, quantities, and evaluation; and by an insecurity about status. It often leads to early coronary illness. (Meyer Friedman and Ray Rosenman, TYPE A BEHAVIOR AND YOUR HEART)

Talented people are really good at their specialty. They can do things in reality that the rest of us can only do in fantasy, and so they lend credibility to our fantasies. It's generally pleasant to observe talent in others, if we lack it in an area that we appreciate.

Gifted people spend a good part of their life waiting for others to catch up with their level of understanding of the patterns that connect seemingly dissimilar things. By the time others catch up, the gifted have moved on to another level, to other interpretations. The spark of genius in one generation often becomes commonplace knowledge in the next.

When Isaac Stern comes to town for a concert, people dress up and go out to preconcert dinners with friends. Food and conversation are followed by two hours of beautiful music, uncommon interpretations of common notes. Post-concert conversations and dancing cap a most pleasant evening for many groups of friends -- an evaning sparked and centered by Isaac Stern's superb playing, but extending well beyond it. Gifted/talented people directly and indirectly enhance the lives of many others, enriching communities.

Areas of More or Less General Agreement

The human brain is a curious, exploratory organ that actively experiences, interprets, and changes the surrounding environment -- applying models it develops to the reality it perceives.

The brain responds best to novelty and intensity, to intellectual stimulation appropriate its level of cognitive development.

Its complex chemical/electrical neural decision processing sequence permits a wide range of cognitive responses.

Its complex hierarchical/temporal/back-front/left-right organization permits rapid cooperative/competitive interaction with itself and with the brains of other people.

Unconscious arousal and emotional processes can affect cognitive activity -- enhancing/inhibiting creativity, learning, and behavior. Similarly, conscious cognitive activity can affect unconscious processes. Drugs can affect conscious/unconscious cognitive activity.

Large amounts of the neocortex are not committed to survival or immediate body control -- thus allowing for the development of culture, art, fantasy, friendship, etc.

The brain experiences a rapid initial growth (during pregnancy and the first year) of preprogrammed areas committed to biological survival and the smooth operation of the body and its movements. It experiences an extended (childhood-adolescent) rhythmic growth and integration of connections among areas committed to the learned explorations of the inner self and the external environment -- problem solving and socialization skills.

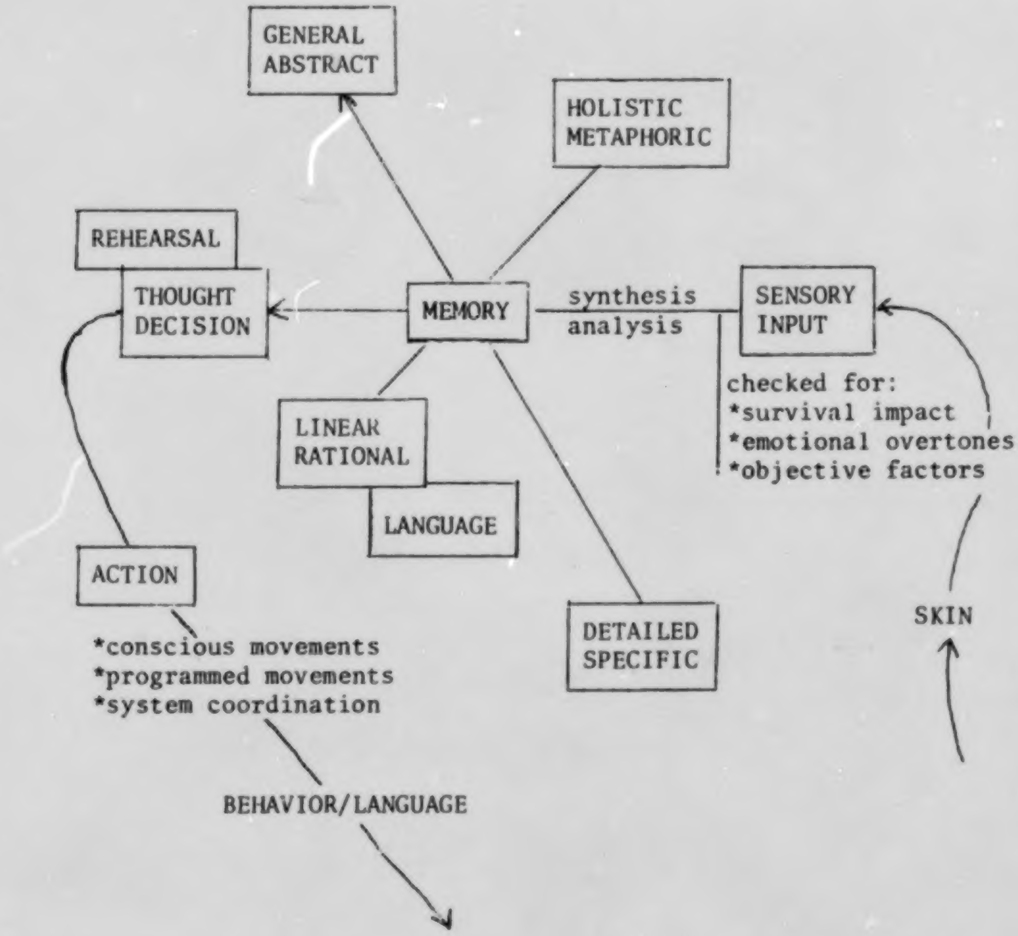
Stress, arising out of the brain's misinterpretation of potentially threatening environmental changes, is a major cause of human illness.

The range of untapped cognitive abilities is far more extensive than previously believed.

The quality and quantity of parenting and teaching materially affect the maturation of the brain and its functions.

It's not certain how the brains of gifted/talented people differ from those of normal intelligence/ability. Factors that influence the cognitive edge gifted/talented people have may include: (1) the speed at which the brain functions, (2) the number and efficiency of connections within a specialized brain area, and between areas, (3) the ability to focus intently on a task, to mastery, (4) the efficiency of memory mechanisms and skills, (5) rapid analysis/synthesis mechanisms that identify relationships, (6) efficient language and spatial mechanisms.

A Functional View of the Human Brain


GENERAL
ABSTRACT
HOLISTIC
METAPHORIC
REHEARSAL
THOUGHT
DECISION
MEMORY
synthesis
analysis
SENSORY
INPUT
checked for:
*survival impact
*emotional overtones
*objective factors
LINEAR
RATIONAL
LANGUAGE
ACTION
*conscious movements
*programmed movements
*system coordination
DETAILED
SPECIFIC
SKIN
BEHAVIOR/LANGUAGE

Citizen Creativity Through A Community-Based Gifted Program

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We live in a changing society that continually asks us to define and redefine our roles as parents, workers and contributors to society. Likewise, we are forced to continually assess the education of our children who have to be trained to meet these changing expectations of our society. We know that this big undertaking can no longer be the exclusive domain of the schools. In fact a recent paper on Excellence in Education by Gardner emphasizes that, "the education of our citizens will be less and less the monopoly of the schools in the formal and conventional senses of the terms and their futures will be promising only if what they undertake to claim as their proper and legitimate role is fitted to what they are uniquely able to do well." Furthermore, we are moving away from reliance on institutional help and towards the era of self-help. (Naisbitt, 1982). People want to be able to equip themselves with the necessary tools for learning so they can solve problems on their own. It is, therefore, logical that educators have to recognize these trends and be willing to work with parents and the community to make this partnership between schools and the community dynamic and more meaningful.

Citizens in a community can with proper guidance and education have a tremendous impact on shaping the future of their children. This is a predictable and powerful "Pattern for the future." The business of parents increasingly influencing their children's future will not be without important secondary effects. As parents reassert their rights, they will also become activated to influence other social institutions such as the schools in directions they see as important.

The purpose of this paper is to demonstrate through the description of a community-based service model, how citizens in one area, i.e. the Tacoma Area in the State of Washington, created a supportive network for a "neglected group"-its gifted youngsters-by drawing attention to their unique learning needs and designing model programs for use by the community. I will also demonstrate how the Council influenced the schools.

When the idea of the Tacoma Area Council on Giftedness was conceived, very few opportunities were available for gifted youngsters in the Tacoma and Pierce County area. The pressure for improving basic education combined with compliance requirements attached to federal and state laws for special education and bilingual instruction had all but eliminated resources available in the past for gifted education. Many frustrated parents were turning to the private schools for help. Those that could not afford this option had no where else to turn for enrichment opportunities to challenge their gifted children. Last, but not least, there were few teachers and educators specifically trained to work with gifted and talented youth. Tacoma, which is primarily a blue-collar community, did not view itself as the home of hundreds of gifted and talented youngsters.

The Tacoma Area Council on Giftedness was established in October, 1979 to meet the needs of gifted youngsters. The Council was composed of representatives from major businesses, public and private agencies, civic and professional organizations, private foundations, and a large number of volunteer citizens. It was created as a result of the concern, interest, and imagination of a parent who felt that her child needed more challenging opportunities than those available in the local schools. The specific goals of the Council were to (a) improve available resources for gifted students in Pierce County and (b) increase public knowledge and appreciation of giftedness. The Council's long-range goal was to create sufficient priority in the greater Tacoma area for gifted education to ensure that adequate public and private funds were devoted to expand and sustain these pilot efforts.

The Founders of the Council identified four specific needs related to gifted children:

(1) The Tacoma area needed a broadly-based organization that could orchestrate a system to assess the needs of the gifted, identify options for meeting such needs, advocate institutional change, stimulate collaborative efforts on model programs, and develop sufficient community awareness and concern to see that pilot efforts obtain the necessary resources to continue and expand in the future.

(2) There needed to be a method for continuously inventorying current options for the gifted and sharing these with concerned teachers, parents, and talented youngsters themselves. Current services were fragmented and isolated.

(3) Educational and counseling services needed to be provided for parents, teachers, and others dealing with youth so that they could better identify and assess the needs of individual talented youth and support these needs more effectively.

(4) Tacoma needed to be shown that it was possible to increase the array of learning opportunities for gifted youngsters through the shared responsibility and resources of a coalition of concerned individuals and agencies.

It should be noted that the care taken in formulating these four objectives proved invaluable to both the Steering Committee and to me as Director in subsequent decisions and issues that faced the Council.

Establishing the Network

Those of us working in the field of gifted education know that there are many myths surrounding what gifted children can and cannot do. Their special needs are not always readily or easily understood by parent, educators, or the members of the professional and business community. It was, therefore, very important for us to take the time to educate different community groups to create an awareness, and acceptance of the Council's goals. This was done by personal contacts and presentations to parent groups, social and service clubs, school superintendents, principals, school boards, teacher groups, PTSA's, TV-interviews, talk shows, and newsletters. Naturally, one cannot be a shrinking violet and yet accomplish such a task effectively! The contacts made through this process later proved most useful as the Council later reached out for support and endoresement for its activities.

The services of the Council fall into three categories:

(1) Direct services to gifted students

(2) Information and counseling services for parents and community members

(3) Assistance to public and private schools, and institutions of higher education.

Services to students:

The programs designed by the Council for the students were created originally to fill a gap, since there were few enrichment opportunities for gifted and talented youngsters in the greater Tacoma area. Services to students have been provided in two formats: (1) Enrichment classes and (2) an Annual Learning Fair.

(1) The enrichment classes are provided for children in grades 4-12. These classes are scheduled after school hours, on weekends and located in several facilities in the Greater Tacoma area. Each class enrolled between 8-15 students and covered a variety of topics in areas such as geology, astronomy, physics, poetry, creative writing, cartooning, social issues, journalism, computer programming, etc. We have offered at least 18 enrichment classes in the fall, winter, spring, and summer of each of the years we have been in operation. While we originally intended to serve children between ages 10-18, we discovered that we had many concerned parents seeking enrichment opportunities for their preschool age gifted children. Consequently, we organized some classes for these youngsters and found them to be quite popular.

Early in the project, we recognized that the enrichment classes were one of the strongest components of our program. While we invited students to attend and provided scholarships for those students who could not afford the tuition, the Council staff also encouraged schools and parent groups to organize similar programs on their own. As a result, we have seen a tremendous growth in the number of learning opportunities for bright youngsters in the county.

There are some important points relating to the organization of enrichment classes which are useful to remember:

(a) Always identify clearly the population you want to serve. Identification and screening of gifted students is very important. This can be done by examining ability and achievement data of students.

(b) The goals and objectives of the courses have to be attainable, measurable, and relevant to the needs of the gifted and talented students that are being served.

(c) Selection of courses has to be made on the basis of student needs and interests.

(d) Courses must encourage students to examine new and current thinking and allow them to develop creative thinking and problem-solving abilities.

(e) Selecting instructors who are experts in the field is a must. These instructors can come from public or private schools, colleges, the business community or service clubs. It also becomes important to orient and train them to the special needs of gifted students.

(f) Use local resources and different sites in the community to build support and visibility for the program.

(g) Use and train volunteers (parents or interested community members) to observe and even participate in the monitoring of these enrichment classes.

(2) "Learning Unlimited", the Council's annual learning fair was originally conceived by members of the Steering Committee as a means of drawing some attention to the work of the Council and with the idea of providing gifted and talented youth with a unique experience-a day long array of courses that would allow children to explore ideas in areas such as science, mathematics, aero-space or laser technology and the like. This fair attracted 300 youngsters the first year. The Fair was designed to encourage parents to attend sessions along with their children or to attend seminars

designed specifically to help them to better educate their gifted children. Learning Unlimited has been held four times since 1979 and is now regarded as an annual educational event in the Tacoma area.

Another important service to students was access to the Council's resource center to obtain referrals for counseling, social, or vocational opportunities in the community.

Services to parents and the Community:

In order to gain acceptance and public understanding of the Council's goals, we had to insure that all youth-serving agencies had the necessary information which they in turn could disseminate to interested parents. We established a counseling and referral center and followed-up calls with information packets that spoke to the specific questions of parent and interested community members. We also established a resource center of over 500 books and journals on gifted education-the only one of its kind in Pierce County and open to any member of the public.

One of the most effective ways to gain support for the Council proved to be our quarterly newsletter. This publication contained regular listings of the Council's enrichment classes, listings of other offerings for gifted and talented students in the community, information for educators, and relevant articles on gifted education. Today the newsletter is mailed to almost 5,000 homes. The Council has also compiled a resource directory of enrichment opportunities within the Tacoma community for gifted children and youth. This publication is available to any interested member of the community.

In addition to the counseling and resource center, the Council also has over the years organized seminars for parents designed specifically to answer and address some concerns they might have on raising their gifted students. Our efforts have also been geared towards enabling parent groups for the gifted to educate themselves as effective spokespersons for gifted students in their respective school districts.

Services to educators:

The Council's services for students and parents have always been designed to supplement and not supplant services provided for children in the schools. As an independent organization, the Council developed a good working relationship with public and private schools in Pierce County. Services to school districts have included technical assistance for program development, intensive courses for teachers, training to teach the gifted, and sponsorship of meetings of coordinators of gifted programs. The Council has also served in an advisory capacity to school districts.

For example, at the urging of the Council a task force was created to advise Tacoma Public Schools.

The Council has also served as a resource to the local colleges and universities who have no staff specifically trained to work in the area of gifted education. They, too, have come to view us as a resource center specifically to obtain current information in the field of gifted and talented education and rely on us for information on current courses and workshops being offered in the state and in the nation. Perhaps the Council's most prominent success in encouraging higher education's involvement in gifted education has been the "Summer Scholar's Program". This effort represents Washington's first residential program for gifted high school students. The project was organized in collaboration with Pacific Lutheran University and will serve 50 gifted high school students from across the state of Washington during the Summer of 1983.

The concept of the Council as an independent organization working both as an advocate for gifted students, and facilitator of programs for gifted students, is a workable one. This model can easily be used by other communities with needs similar to those of the Tacoma area. Several factors I feel have contributed to the Council's successful operation in the Tacoma Area.

(1) The clarity of the goals outlined by the Council's founders proved very useful in designing the programs and setting the course operation for the Council.

(2) The Steering Committee of the Council were genuinely interested and dedicated to the goals of the Council.

(3) The availability of trained staff who were not only willing to continually educate people but were also willing to be creative in designing programs for student and parents to maintain support and interest for the Council's program.

(4) A supportive community that expressed their support by joining as members of the Council, donating resources, and by joining as volunteers on the various task forces as organized by the Council. The University of Puget Sound provided in-kind support and office space since the Council started operating in 1979.

(5) The support of the major Foundations over the four years that the Council has been in existence.

Funds for the Tacoma Area Council on Giftedness came from the Northwest Area Foundation, Weyerhaeuser Foundation, Cheney Foundation, local service clubs, and donations from members and the community. Since the grants are ending this year, the Council is exploring the idea of turning over some of its services to various other agencies such as AAUW (American Association of University Women), Junior League, the schools and universities in the area, and a newly established, county-wide parent group in Tacoma.

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REALITIES, RECONCILIATION, RESOLUTIONS
for the
GIFTED CHILD from a DIFFERENT CULTURE

Alexinia Y. Baldwin, PhD

The three R's of this paper seem to symbolize a "back to basics" intent. This is not the intent although some basic ideas and attitudes are necessary for the continuing care and concern for our gifted population, especially those from different cultures. A clarification of these basics will be possible only if we look candidly at the realities surrounding education of the gifted, consider subsequent means of reconciliation of these attitudes and ideas, and resolve to creatively plan for the future patterns of education of the gifted.

Realities for Consideration

The realities that are listed below reflect the general perceptions that are related to education of the gifted child. A careful analysis of these realities will provide us with some directions for the future.

1. The attitude of the general public toward education of the gifted still reflects inconsistencies in the acceptance of the concept of giftedness and the attendant need to provide educational programs for those exhibiting such traits.

   Mortimer Adler (1982) for example has suggested the The Paideia Proposal: an Educational Manifesto, that the same course of study and the same objectives for all children through grade twelve, properly taught, are sufficient for children of all ability levels. This reasoning is lauded by many people today.

   The inconsistency of the public's attitude is further reflected in its willingness to provide services for gifted children when federal monies are available and its haste to eliminate services and consider programs for the gifted expendable, when these monies are not available.

   Among those parents and community individuals who realize the tragedy of the neglect of this human potential, the sincerity and concern is present but their voices are often unorganized and too weak to insure continuing programming.

II. Another reality is the inconsistency among those of us who are planners for education of the gifted regarding, a) who the gifted are, b) how we identify them, c) what and how we teach them, d) who will teach them, and e) how we will evaluate what has been taught to them.

a) Dr. James Gallagher in his discussion during the 1983 International Convention of the Council for Exceptional Children in Detroit, alluded to this inconsistency when he echoed the complaint that is heard many times regarding our gifted programs-"Why is my child considered gifted in School A and not in School B?" or "What difference is there between my child who has an IQ of 134 and is designated gifted and my other child who has an IQ of 132 and is not designated gifted? Is one gifted and the other not?"

Unfortunately, at this point in time, the renaissance in education of the gifted has not afforded the public a clear differentiation between giftedness as a philosophical concept and giftedness as appropriately defined to meet the requirements of a particular organizational pattern within the school and the restraints of budget and staff. The politics involved in getting legistlation passed at both the state and federal levels has required pragmatic inclusion or deletions within the true or philosophical concept of giftedness.

A very real inconsistency is the continuing lack of a proportionate number of black and other minority students in educational programs for the gifted. This reality should be a great concern to educators in general and researchers and program developers specifically.

b) Another reality we must face is how we will identify the gifted. This problem continues to surface during discussions on education of the gifted. Joseph Renzulli indicated during the open discussion of a hearing for the National Council on Excellence which was held in Boston, October, 1982, that he felt at this time identification was not a crucial issue in planning for the gifted. His statement is based on the extensive experience he has had in this area and his research with the Revolving Door Identification procedure. In this procedure, the pool of children identified is expanded to as much as 25% of the school population. Perhaps Dr. Renzulli is correct; however, there are many people who are concerned about the procedures that are generally used for identification and the standards which have been set for selection. All too often and in spite of the enlarged pool, identification of the minority gifted children has been difficult.

The next set of realities are:
c) What and how we will teach the gifted and
d) Who will teach the gifted.
This set of realities can be seen in the inconsistencies that are evidenced in the proliferation of teaching models being used in classes for the gifted.

The variation from state to state on the matter of teacher certification and the plethora of organizational patterns such as pull-out programs, resource centers, self-contained classes, just to name a few, add to the list of inconsistencies to be considered.

Other questions we might continue to ask are: What constitutes a qualititatively different curriculum? Is there a special curriculum package which we can designate the "gifted curriculum? Can you develop a special curriculum package for the culturally different? Some say we can others say no.

Last but not least, e) proper evaluation of programs for the gifted as well as the evaluation of class activities by the gifted pose great problems due to the unlimited possibilities for development among the gifted population. How do we proceed? What evaluative instuments should we use? All of the questions which are not fully answered represent a reality which we must face. The task is doubly difficult when we consider evaluating the progress of a gifted child from a different culture.

Using these foregoing realities as a backdrop for my discussion, I would like to pursue ways of reconciling the uncertainties which have been present as realities within the area of education of the gifted, and suggest further steps for the resolution of these problems in the future.

The problems and concerns of the the children from different cultures and the effect of these realities as stated, on these children,will be discussed. It is my hope that the concerns of other gifted children, e.g. physically and emotionally handicapped, will be discussed against this background of realities during some future program.

Reconciliation

I. The attitude of the general public is understandable in view of instances in history, of misuse of the designation of giftedness or genius; however, experience and a greater awareness of the pedagogical and philosophical imperatives for recognizing and planning for the gifted child should make the message to our publics more acceptable. It is unfortunate that the existing regular school programs in some public schools were so lacking in creative and innovative strategies that programs which were offered for the gifted were in many ways what should have been offered for all children. The exemplary planning for the gifted has, however, become a model for programs for all children. This is a decided plus for education of the gifted and an argument against elitism. The North Carolina schools for the gifted are examples of models that are being used, not only to improve teaching techniques throughout the state but to experiment with new designs in curriculum development. We must, in this country be careful that we don't settle for mediocraty. As Garry Wills (1983) has so aptly stated,

> "The most intimate, self-engendered enemy of democracy is envy, which kills the generous feelings of admiration. If equal education makes people resent excellence-makes me, for instance, feel wronged that there are Newtons and Einsteins in the same world with my fellow mathematical ignoramuses-then it destroys its own foundation." [Pg. A6]

Can we afford not to recognize and provide for this natural resource which is found in all cultural groupings? The answer should be a resounding NO! This right to an equal opportunity is crucial in considering the gifted child from a different culture. Attitude is important in that it establishes a philosophy or mind set for approaching the problem. A start toward this goal would be the acceptance of the assumption that giftedness does not manifest itself in a manner which can be genetically ascribed to that grouping. The needs of this gifted minority within an educational minority must be addressed.

Attitude is very important when program planning takes place. Gifted programs cannot be considered appendages to our regular school programs, recognition of this exceptionality and provisioning for its needs are part of the regular program. We would not eliminate third grade, math, or spelling would we? The suggestion that these could be eliminated without harming the child is no less ludicrous when we think of eliminating activities or programs which enhance the scope of development for the gifted child.

The painful cry of the parent in Ohio whose child found school so unaccepting of his ability to move forward creatively that he contemplated suicide, and the joyful affirmation of a mother's insistence upon the potential of her 6th grade inner city child who stepped forward on a stage to receive a national math award, speak to the need for reconciliation of attitude towards programming for the gifted.

II. In order to reconcile the inconsistencies among those of us who are educational planners, regarding, a) who the gifted are, b) how we identify them, c) what and how we teach them,

d) who will teach them, and e) how we evaluate what has been taught, we must consider each as a separate entity yet as an interactive whole. Each is so dependent upon the other.

As we look at the myriad of definitions, we must reconcile these differences by pointing out the similarities, explaining the differences, and focusing on the basic concept and its meaning. Giftedness can be demonstrated in and through the major categories of human endeavor and the enumerable sub-categories thereof. Perhaps giftedness is a state of becoming with this state being exemplified at different stages and supported to different degrees by the familial and educational environments in which the child finds him or herself.

I have tried to reconcile these differences by defining giftedness as the presence of high ability, task commitment, and creative problem/finding ability in Cognitive, Psychosocial, Psychomotor, and Creative production. Joseph Renzulli's (1979) operational definition of giftedness is certainly an important part of this concept of giftedness.

Identification of gifted children from all populations but especially those children who have come from different cultures have posed one of the most challenging problems in education of the gifted. In the case of the culturally different child, identification has been difficult due to the lack of adequate attention to non-academic or performance indicies of giftedness. Whereas non-academic or performance indicies would not be necessary for all gifted children from a different culture, the use of such a measure enhances the judgments made on the abilities of the child. Biographies of undisputedly gifted minorities, extensive literature reviews, and experimental data have led to the assumption that observation or knowledge of the above average quality of certain behaviors can lead to more accurate identification of gifted minorities.

Central to the identification for those children who come from diverse cultures or circumstances is an understanding, on the part of the personnel given the responsibility of completing this task, of the variables which influence the "functioning level" of the children of this group (See Appendix I). The following list of variables are expanded from research done by Newton Metfessel (1965), and are generalities for consideration.

1. Parents cannot speak English thus cannot converse with child in language which will be needed for upward mobility

2. Physical environment in the home does not provide or stimulate normal development of directionality, position or size because there is a lack of toys and other play things which are colorful and designed to assist the child to naturally develop these skills.

3. Conversation which provides children an opportunity to listen to questions and answers being discussed is lacking.

4. Attitudes toward respect for elders gives child the appearance of cowardness and backwardness.

5. Discipline does not encourage inner locus of control thus children often lack self-motivated problem solving skills.

6. Pragmatic nature of activities of the home does not tolerate fantasies as a way for children to explore possibilities or develop flexibilitiy of thinking.

7. Environment dictates the necessity of survival, thus children might be forced to accept mature responsibilities related to immediate survival instead of education. Rural child might be needed on the farm. Child might be needed to supplement income or babysit, etc.

8. Out-of-school experiences are limited. Such resources as museums, libraries exhibition halls and zoos, are frequently out of the child's frame of reference and experience.

9. Lack of concern or respect for school regulations due to the attitude that school does not supersede the family. This might also involve a lack of respect for the school "establishment", which has been passed on to the child.

10. Physical and emotional environment which develops in the child the ability to tune out audio stimulus thus seriously undermining the development of listening skills.

11. Home environment and community environment which does not provide a chance for positive concepts to develop.

12. Language rich in imagery mitigates against development of precise vocabularies for "standard" school use.

13. Environmental isolation causes child to lack some of the interactive skills which might be considered important in developing leadership skills.

The foregoing list might be considered as factors mitigating against the acquisition of skills deemed important for success in school. We overlook the fact that quite often a child brings with his or her non-standard behavior, evidences of the high level ability to process information. Some of these behaviors are typified in studies by Torrance (1971), Bruch (1972), Bernal (1972) and Baldwin (1977).

For the planner and the teachers involved in placement of gifted children from different cultures, knowledge of behaviors that represent certain mental processes is crucial. However, as Gallagher (1975) has pointed out, it is difficult to specify learning characteristics which are generalizable to all gifted children. It is equally difficult to formulate a composite which specifies the culturally different gifted child.

How and what to teach is a crucial consideration. It is a misconception to think that the gifted child can really work without the intervention of the teacher. There are important skills that all children must be taught. Gifted children are able to acquire these skills at a much higher rate and thus do not require the same amount of time as is needed by the average child, to grasp the concept. For the gifted child from a different culture, the same ability to grasp concepts at a faster rate of speed exists. Teacher strategies and course content should be planned to capitalize upon the strengths of the child; moving horizontally in developing a wide range of experiences and also moving vertically in order to strengthen the child in the areas of his or her deficits. This does not require remedial teaching but stimulating introductions to concepts that are unknown, keeping in mind that these children have the capacity for grasping, and absorbing knowledge at a high rate. The research of Guilford and others (1971) indicates that an individual can have the ability to process information at a very high level but lack the stimulus for developing the skills necessary for product development.

Teacher certification or qualifications has been a concern of the major professional organizations for education of the gifted. As a result of this concern, a list of requirements relating to the training of teachers has been developed. The ramifications of this list of requirements is yet to be determined but it is crucial that this list include a requirement for teachers to understand the unique needs of the child from a different culture. There will continue to be a debate about the quality of the teacher when faced with an expert who wishes to share this knowledge with a group of gifted children on a continuing bases. Can an experienced poet, for example, be a good teacher for the child who is gifted in this area? Perhaps the reconciliation in this area rests with the specific training of teachers of the gifted who are experts in their areas. These persons can be volunteers or temporary employees. Businesses, the world of performing and graphic arts, government, medical and other human services, higher education, and industry are just a few of the resources for specific areas of teaching.

Very little is said about evaluation of class activities and this is understandable. A common practice in many school districts is to look at the number of grade levels above the average the child has scored and use this as evidence of success. Whereas this type of evaluation can and should be included in any plan, it should not be the only indication of success. Gifted children can reach the minimum which might be required for success in testing but they are capable of doing much more which can't be assessed by our standard tests.

Techniques which involve observations or participation in problem solving activities or product development, are just a few of the techniques which should be used to enhance the evaluation of the progress of the gifted child. Lee Cronbach's latest book on evaluation addresses many of the concerns regarding program evaluation.

Since we have reviewed the realities and attempted to reconcile the differences, it is necessary to consider a resolution of the problem and pursue the proper questions in research. We should then plan programs which break out of old patterns and give stimulation to the fertile minds of our young gifted students.

Resolutions or Patterns for the Future

The future of the gifted child from a different culture is inextricably tied to decisions which we make in relation to education of the gifted in general but this minority within a minority will need to have much more attention paid to their unique needs. I would like to pose several problems, suggest possible resolutions of these problems and pose further research possibilities to address these problems in the future.

Problem I. What can be done to influence attitudes of the public?

An attitude that designation of gifted classes serves to further separate groups within society is strongly evident in large urban populations. Research has shown that attitudes toward change and innovation are significantly affected when all segments of the society are involved in making decisions about this change. La Fromboise and Plake (1983) in their article on the research needs of American Indians spoke to the lack of involvement of American Indians in social research relating to them. The point being that instead of being involved, they are constantly being described. They are treated as..."sources of data rather than being invited to contribute to the complete research venture, including problem formulation, interpretation of data, and conclusions." [pg. 45]

The acceptance and delight being shown in the attention being paid to the gifted is evident in the Detroit Public Schools where an elementary school to house gifted children was established within the inner-city where the population was predominantly black. The population of the school reflects this city's ethnic structure and the attitude toward having such a venture is reflected in the rush on the part of parents to have their child assessed for entry into the school. The public is calling for another such school in another section of the town.

The success of this particular venture was due to the involvement of the community in the planning. Active involvement of all populations in planning programs for the gifted would be a pattern I would suggest for the future.

Problem II. What types of observable behaviors are indicators of high level ability?

The assumptions that follow this question are:

1. Observable behaviors are indicators of the type and quality of the mental processes an individual possesses.
2. Recognition of these behaviors can be taught to teachers and other staff.

Attention to this problem is especially relevant to me due to my personal experience as a child, my experiences as a public school teacher and my subsequent experiences in higher education. Consequently, I have focused much of my research activities on this area. The research questions I have asked are:

1. What is the relationship of certain performance criteria to established educational models?

2. What is the effect of selection processes using performance criteria to identify children who come from "disadvantaging backgrounds?

Phase one of continuing review of minority students who were identified using performance criteria as a supplemental measure has been completed. It was shown in this research that children from "disadvantaging" backgrounds who do not meet IQ or achievement criteria for gifted programs can be selected by using subjective measures as supplemental data for selection (Baldwin, 1977).

Items for the performance scale have been pooled for the four areas of human endeavor from information secured during the longitudinal study. I have also developed an identification matrix which can accommodate within its design, a series of behaviors and abilities.

Research is underway to determine the relationship between data secured during the identification process and some other instruments. A short explanation of the concept follows.

The Baldwin Identification Matrix (See Appendix 2) has been designed to include an array of assessment techniques which will help the planner to get a complete profile of the child. Information on the matrix represents the ability scores of children above the average of that school district or state or other large organizational grouping. The matrix gives a total profile and through its basic philosophy communicates the importance of each of the areas of giftedness. The following sample items from a checklist which is being validated give an example of the type of supplemental performance criteria which can be used in tandem with or as part of the Baldwin Identification Matrix in identifying gifted minority individuals.

The scale for assessing a particular ability area is a one to five ranking of each of the items of this area with five being highest. Accompanying this supplemental checklist will be an optional form for descriptive sentences from selected populations such as peer group, parents, community persons. The directions will instruct the individual to "Write a short descriptive sentence about (name) which appropriately reflects outstanding performance above the average in the four areas listed.

The large divisions or areas of this checklist reflect the definition of gifted and talented as used earlier in this paper. These divisions are:

1. Cognitive ability - IQ, general and specific achievement areas

2. Creative ability - visual and performing arts, creative problem-solving ability

3. Psychomotor ability - perceptual abilities, physical abilities, skilled movements and non-discursive communication (e.g., expressive and interpretative movement)

4. Psychosocial ability - e.g., leadership skills, behavioral analysis

The following list might serve as an example of some behaviors which indicate ability to process information at a high level. These abilities were matched to the intellectual processing components of the Structure of Intellect (SOI).

1. Colorful, persuasive language skills with peer group. (evaluation of semantic implications; fluency of thought; evaluation of behavioral implications)

2. Ability to use commonplace items for purposes other than those intended. (e.g., dolls, balls out of tin cans; wagons, sleds out of packing boxes). (divergent production of symbolic transformation; flexibility of thought)

3. Ability to remember and report detailed information concerning events which occurred in community outside of school. (e.g., story of tragedy or triumph of individual in community who might be outside of the law. (cognition, memory, classification, semantics, behavioral implications)

4. Ability to judge environmental situations by cues which are not usually taught in school. (e.g., signs of an upcoming storm; signs that farmers use for deciding on planting, and harvesting; signs in nature which indicate danger) figural ability, high level cognition ability; symbolic implications; figural transformations)

The inspiration for developing the supplemental scale has been Mary Meeker's (1969) paper on "New Directions for Identifying Disadvantaged Gifted". Some sample items from Supplemental Checklist for Children from Different Cultures, Socio-Economic Backgrounds, and Geographic Locations by Alexinia Y. Baldwin, 1981, are:

1. Psychomotor.
    a. ability to do skilled movements such as skate, to type, to waltz, to somersault, to punt, to juggle
    b. ability to catch balls
    c. ability to draw from memory
2. Psychosocial.
    a. sense of loyalty, b. sense of what seems fair or ethical for friends, playground leadership role
3. Creative.
    a. ability to laugh at himself/herself; gets enjoyment out of activities of school day
    b. ability to think of a novel idea for survival in particular environment
4. Cognitive.
    a. ability to understand and plan activities related to usual environment and experience
    b. ability to read and interpret material in native language

For the future, I would recommend that teacher training programs involve training which would sensitize teachers to recognize behaviors which indicate mental capacities for processing information at a high level.

Problem III. What instructional technique is best suited for the gifted?

There continues to be extensive discussion on the merits of certain instructional techniques that should be used in the development of the exceptional abilities of gifted children. The discussion becomes more intense when the merits of certain strategies vs. other strategies are suggested as proper for gifted children who come from different cultures. The lack of empirical research in this area leaves much of the decision-making process to chance. The Hopkins studies (1977) have focused on a particular content area but there is still a need for studies which focus on processes which involve strategies for strengthening or overcoming the deficits and enhancing the strengths which might be present in a child from a different culture.

The recent book by June Maker (1982) has attempted throughout its chapters, to analyze the various teaching models and what they have to offer in meeting the needs of gifted children. She has pointed out that all too often there is little or incomplete research which verifies the use of the model.

I recommend that for the future, more attention be given to the analysis of the effect of certain strategies on the child from different cultures. Mary Meeker (1969) in her earlier research has suggested that we focus on the development of certain intellectual processes, e.g. convergent and divergent abilities. She feels that the enhancement of intellectual abilities will make the trajectory of the child's experiences become enlarged.

Mary Hunter Wolf in her program has enhanced the artistic abilities of the children in her program by beginning with strengths and transferring to academic areas in which the child might be the weakest.

Problem IV. How can evaluation more appropriately indicate the quality of change in a program or the individual student's ability profile.

Evalution of the processes which have been used in developing the abilities of gifted children require methods which give insight into the changes which have been made in an individual's mental and psychological growth. The usual standardized measures are geared toward assessing levels of acceleration in certain areas. Very little evaluation is done on the quality of that acceleration.

Future patterns for meeting the needs of gifted children should include evaluation processes that include qualitative as well as quantitative techniques.

As we look at the Three R's I have listed for you today, it is critical that we consider the patterns of the future in light of the current educational concerns expressed in the recently finished report of the National Commission on Excellence, (1983) and the Paideia Proposal: an Educational Manifesto (1983). As in all reports, the extremes presented have many exceptions. However, a large percentage of the population affected by the inadequate educational milieu referred to in these reports are children from different cultures. Those who are gifted among this group, suffer even more.

Symbolically, another R could be added to the three I have used today: an R for Revolution. This would be a revolution of ideas regarding the possibilities for capturing the use of technology as we create patterns for the future.

Exciting models for education in general and education of the gifted child from the inner city specifically, are emerging. One model of which I am aware, has an articulated program from pre-school to 8th grade. The first emphasis for all of the children in this school is the development of skills necessary for understanding and communicating knowledge. Other aspects of the model call for the cooperative exchange of ideas and training experiences at high-tech institutions, financial institution, science laboratories, and many other areas throughout the city. This model certainly represents a pattern for the future of education of the gifted child from a different culture.

In conclusion, I would like to stress the importance of attendance to what is--The REALITY of the situation--How we can RECONCILE the differences and plan and dream with RESOLVE about the significant patterns for the future of education of the gifted for ALL children.

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Developed by Alexinia Baldwin
1977

Appendix I

DESCRIPTORS	EXTERNAL & INTERNAL DEFICIT	POSSIBLE ENVIRONMENTAL CAUSALITY	EXCEPTIONAL CHARACTERISTICS TO LOOK FOR	INTELLECTUAL PROCESSING ABILITY INDICATORS	HORIZONTAL/VERTICAL PROGRAM ADAPTION
1. Outer locus of control rather than inner locus of control.	1. Inability to attend to task without supervision.	1. Discipline does not encourage inner locus of control. Child is directed to follow directions. Tradition dictates strict adherence to directions.	1. Academic-retentive memory.	1. Convergent production of semantic units.	1. Contract activities-directed level development--counseling for trust--skill development.
2. Loyalty to peer group.	2. Inability to externalize behavioral cues.	2. A need to belong. Empathy for those in similar situation.	2. Psychosocial-sense of humor; intuitive grasp of situations; understanding of compromise.	2. Affective behavior--possible indication of convergent production of behavorial units or classification.	2. Group activity debating counseling seminars--philosphy logic--process and skill development.
3. Physical resiliency to hardships encountered in the environment.	3. Inability to trust or consider "beauty" in life.	3. Environment dictates need to survive. Anger and frustration increases animalistic desire to survive. Alternatives, solutions are forced.	3. Creative--tolerance for ambiguities; insight; inventiveness; revolutionary ideas.	3. Divergent production.	3. Creative activities-counseling--mentor relationship--process/skill development.
4. Language rich in imagery and humor rich with symbolism; persuasive language.	4. Perhaps only avenue of communication--standard language skills not used.	4. A need to use subterfuge in environment to get message across--a lack of dominant language skills--a need to fantasize through language--acute awareness of environment due to its effect on individual.	4. Creative fluency, flexibility, ability to elaborate, originality. Academic--retentive memory, ability to think systematically.	4. Divergent production of semantic classifications, systems relations & transformations; fluency of thought evaluation of behavioral implications.	4. Writing & speaking emphases--debating--rhetoric analysis. Contemporary and historical literary comparisons. Literary product development.
5. Logical reasoning; planning ability and pragmatic problem-solving ability.	5. Opinions disallowed in school situation.	5. Early responsiblity related to survival.	5. Thinks in logical systems, uncluttered thinking, insightfulness, understanding cause and effect.	5. System analysis; decision-making skills.	5. Exposure to systematically developed strategies for solving problems; logic.
6. Creative ability.	6. Lack of directed development of ability.	6. Need to use items of environment as substitute e.g., dolls, balls out of tin cans; wagons, sleds out of packing boxes; dolls out of "corn shucks."	6. Flexibility of thinking, fluency, special aptitudes in music, drama, creative writing.	6. Divergent production of symbolic transformation; flexibility of thought.	6. Special classes in creative aptitudes, independent study, mentor, process and content skills development.
7. Social intelligence and feeling of responsibility for the community; rebellious regarding inequities.	7. No opportunity to exercise behavior in community without censorship.	7. Social reforms needed to help community; high regard for moral obligation to fellow man; religious influence; tradition; survival dictates awareness of social elements related to survival.	7. Intuitive grasp of situations, sensitiveness to right and wrong.	7. Affective domain; Kohlberg's upper levels of moral development.	7. Leadership Seminars Community Service Participation--counseling, historical antecedents. Process and content skills.
8. Sensitivity and alertness to movement.	8. Lack of training and development.	8. Need to excel, toughness of environment, family emphasis on physical prowess to substitute for lack of educational input.	8. Hand-eye coordination, physical stamina, skilled body movements.	8. Divergent production; convergent production of behavioral implication.	8. Special developmental classes, olympic participation, physical culture classes.

* Information from research with Indian children: Memory of symbolic implications; memory of symbolic units; convergent production of figural units; divergent production of symbolic relations. (Meeker, 1977)

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Appendix 2

Figure 2

Baldwin Identification Matrix (BIM)

ADAPTED FOR USE BY DATE

STUDENT SCHOOL

AGE GRADE SEX SCHOOL DISTRICT

SAMPLE

ASSESSMENT ITEMS	SCORES 5	4	3	2	1	BNA
1. Stanford-Binet Scale	140+	139-130 ✓	129-120	119-110	109-100	
2. Metropolitan Achievement	95%ile	94-90 ✓	89-85	84-80	79-75	
3. Learning Characteristics Scale	32	28-31 ✓	24-27	20-23	16-19	
4. Creativity Characteristics Scale	40	39-35	34-30	29-25	24-20	
5. Leadership Characteristics Scale	40	39-35	34-30	29-25 ✓	24-20	
6. Psychomotor Teacher Rating	5 ✓	4	3	2	1	
7. Motivational Characteristics Scale	36-34	33-30 ✓	29-26	25-22	21-18	
8. Music, Art, or Dramatics Rating	5	4 ✓	3	2	1	
9.						
10.						
11.						
COLUMN TALLY OF CHECKS	1	5	2	1	0	
WEIGHT	x 5	x 4	x 3	x 2	x 1	
ADD ACROSS	5 +	20 +	6 +	3 +	0	= 34
TOTAL SCORE	34					

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EDUCATION OF TALENTED AND GIFTED ELEMENTARY, JUNIOR HIGH, AND HIGH SCHOOL STUDENTS IN A SMALL SCHOOL DISTRICT

Joan Hladky

A relatively small school district can provide for the challenging education of many of its gifted students. Pleasant Hill, Oregon, provides an example of what one small district (approximate attendance of 1300-1500 in recent years, grades 1-12) can do to provide such a challenge for able students. This six-year-old program has had an expanding influence on other areas of the curriculum in the district, and parts of the program have been adopted and adapted by other small districts. Our program deals largely with academically talented students, with some emphasis given to dealing with underachieving gifted students. There is no special provision for identifying "talent," but many of those in the program are talented in areas other than academics, and modifications are made to suit their needs. Since we do not limit our identification to the top three to five percent, we have more opportunity to pick up students exhibiting a variety of talents, as most talents involve an above-average, though not necessarily gifted, intellect.

Background

Pleasant Hill is basically a bedroom community for Eugene and Springfield, with some part-time farming and many fathers working in woods-related jobs, though this is not as prevalent as it was even five years ago. There are four buildings in the district: a primary building for grades K-3, Trent Primary School, the Elementary school for grades 4-6, a Junior High for grades 7 and 8, and a four-year high school. Enrollment ranges from 80 to 125 per grade.

Parent Involvement and Administrative Support

The Pleasant Hill program for gifted originated through concerned parents who were serving on the Lay Curriculum Advisory Committee--advisory to the superintendent. In 1976 some of these parents researched and wrote a sound document to support their contention that more needed to be done for able students. The School Board spent the next year doing some additional study of the topic and then provided funds for a half-time teaching station per building for such a program, beginning in the fall of 1977.

Parent involvement since that time has been on an informal basis, but with many opportunities for input and interaction. There is an annual Parent's Night each fall for grades 1-12 which gives parents an overview of the entire program and usually features student work, demonstrations, and presentations. The primary school has a regular parent newsletter and encourages parent helpers in the classroom. Elementary units usually conclude with a sharing program presented for parents or other classrooms, or both. At all levels parents are encouraged to accompany the students on field trips, to assist with ticket arrangements, and to share their knowledge when it fits into planned units. The high school always has an informational meeting for parents before students enroll in the program there. At all buildings parents serve on the screening committees (but not in buildings where they have children in the program). With a stable staff and a small community, many students may have several years of contact with the same teacher, and this builds rapport and stability in the parent-teacher-child relationship.

The program is, and has been, funded solely through district funds. In the early years the program coordinator collected evaluation information from the populations served and presented a year-end report to the School Board, and also made periodic reports to the Lay Curriculum Advisory Committee. Three years into the program, the superintendent formed a special lay committee which evaluated the total program. Since that time the program has operated as an integral part of the curriculum offerings of the district, and makes reports no more frequently than any area. All of the district's administrators, as well as the School Board, have been supportive of the program.

Program Philosophy

The Pleasant Hill program, called the Independent Learning Program for grades 1-6 and the Scholars' Program for grades 7-12, is curriculum-based rather than process-oriented, although both the Guilford model and Bloom Taxonomy are used in curriculum design. The curriculum base suits the needs of the community, which has always had a bias toward "basics."

The definition of gifted utilized by the program is "those children capable of high performance--whether or not they have demonstrated this potential--in any or all of the following areas:

1. general intellectual ability
2. specific academic aptitude
3. creative and productive thinking

The word potential, and the phrase "whether or not they have demonstrated this potential" have been stressed in our screening process.

Identification and Screening

Originally five identification measures, plus a screening committee, were tried. The committee iteself (made up of the "gifted" teacher, building principal, building counselor, another teacher, and a parent) decided that three of these measures were the most useful and our screening procedure now uses these three inputs: Otis Lennon test scores, Stanford Achievement test scores and teacher nominations. Both tests are routinely administered to all students at the end of second, fourth, sixth, and eighth grades. Students are rescreened annually for the first six grades, on entry into Junior High, and again on entry into tenth grade when they become eligible for the High School Scholars' Program.

If a parent feels their child should be in the program, and the child is not selected, the parent may elect to have the child given an individual WISC or Stanford Binet. Usually a full psychological battery is done by the Education Service District Psychologist. This testing has also been requested by classroom teachers and resulted in the identification of additional students for the program.

Grades K-6, Independent Learning Program (ILP)

Although there are differences between the primary and elementary buildings in their administration of the ILP program, some commonalities are:

1. It is a pull-out program (with significant differences between buildings.
2. "Revolving door" approach. Students are rescreened annually so students are in and out of the program annually, (not all students, but some). This was originally controversial with parents, but they now usually look at it as "taking turns."
3. Separate screening for the math unit. Each year one grading period is devoted to a math enrichment unit. Students are screened separately for this unit in the strong belief that math ability is different from verbal ability, so different students are served. (Some students who are tops at everything are, of course, in all units).
4. Curriculum enrichment units. These are usually extensions and enrichment of the basic curriculum offered. Each year usually features a language arts unit, a social studies unit, a science unit, in addition to the math unit.

Primary School and ILP

Kindergarten is new to Pleasant Hill, and is not really part of the half-time ILP teacher's load. However, she does assist with students who are already reading when they enter school, and presents some process lessons for kindergarten classes. At the first grade we feel our identification data is tentative, so students are considered in an ILP "enrichment" program. The ILP teacher does memory activities for whole first grade classes in the fall and usually doesn't start ILP enrichment units for first graders until January. This gives the first grade teachers time to feel comfortable with the students and with what they can do, and gives the youngsters a chance to get acclimated to school before being "pulled out" for a special class.

The regular pull-out units begin in second and third grade. ILP classes meet roughly two to two-and-one-half hours per week for grades 2 and 3. They are scheduled on different days at different times so that students do not always miss the same class.

Elementary ILP

At the Elementary it has been possible to avoid the "make-up work" problem so prevalent in pull-out programs. Students elect an entire nine-week unit which coincides with the regular grading period. During that time they do their "home room work" on a"compacted" basis with much use of pre-testing and independent study. Students come to ILP only during their home room time (approximately an hour a day, four days a week) and miss science and social studies. They will be at least exposed to the concepts they missed in home room, and in addition do whatever unit they have signed up for. Curriculum units are designed utilized the Guilford model (see Figure 1 and 2).

Students receive "course descriptions" in the fall along with their letters of invitation, and sign up for two of three units in ILP according to their preferences. Occasionally students see only one unit that interests them, and so they choose only one. More often Mom and Dad, unfortunately, decide that a unit will be "good" for their child and sign him/her up regardless of student interest.

Scheduling according to home room times makes for some interesting scheduling for the ILP teacher: five-minute overlaps or five-minute dead spaces, but it certainly increases good-will with the home room teacher.

Ripple effects of ILP

The gifted program has affected curriculum in Pleasant Hill in the same way that a pebble thrown in a still pond sends out ripples. Some of the effects are shown in Figure 3.

Junior High Scholars' Program

Scholars' English replaces the required English for seventh and eighth graders. This is more feasible than Scholars being an elective in a small junior high with a limited number of electives and related scheduling problems.

In Scholars' English all the basic curriculum objectives and requirements are met. The intent is that all students will pass their ninth grade competencies by the end of eighth grade and so be eligible for an accelerated English program at the High School. The Bloom Taxonomy is taught to students in the fall (see Figure 4), and utilized throughout the year to help them evaluate the level of work they have achieved on projects and in class discussions. (Figure 5 shows a sample form used in class and utilizing Bloom).

In addition, there is a humanities emphasis to the curriculum, using yearly themes to utilize outside experiences. Themes such as Structure, Form, and Design enabled us to study the structure of the Western as a literary form and see an exhibit of Remington and Russell art when it came through Eugene. That theme also led to some novel and interesting independent research projects: the structure and design of Panzer tanks, the structure of English cathedrals, the design of chess strategy, and many more.

Another favorite theme is "Past, Present, and Future." This enables us to study mythology and science fiction--two types of reading the students particularly enjoy. We may also include some current events reading (not necessarily a favorite) as part of the "present" and take a trip to the State

Capitol while the legislature is in session. Several of the students have been honorary pages for the district's representative through such trips. The class makes an annual spring trip to Ashland to see at least one play, and usually two. Figures 6 and 7 show how themes incorporate the skill areas of English into the curriculum, as well as the humanities.

Scholars' Math was instituted when the program was three years old. Seventh graders work at their own rate through pre-testing and complete all of the regular seventh grade math book, and at least half of an eighth grade book which gives a good introduction to algebraic concepts. Eighth grade students complete Algebra I. Problem-solving is also an important component of this class.

High School Scholars' Program

The High School Scholars' Program is open to tenth, eleventh, and twelfth grade students by invitation (passing the screening process). Students may challenge the class entrance requirement by writing an essay for the teachers. Scholars' is a two-hour block taught by two teachers, and covers an expanded version of the History of Western Civilization including literature, language, and the arts, as well as history. See Figures 8 and 9.

Topics are covered through a combination of teacher lecture and student research. Figures 10 and 11 show some of the structure of the class in outline form. Students research topics in each of the time periods and present oral reports to the class. One of the two class periods is usually for lectures and reports, and the other for a "study" period. The "study" period may be used for films, and Newsweek lessons are also a part of that time period, keeping students up-to-date and often finding links to the past. One day a week is often a "games" day when chess, go, and similar games are played. In evaluations, students rate this as essential because of the intense level of work they do.

Student reports usually show tremendous growth through the year in organization and in techniques for keeping audience interest, and in oral skills. Student often become totally fascinated with some topic and then will have the class hear more than they ever wanted to know about perhaps the Vikings or the Huns.

Students have six-week language units on languages important during a period. They read literature of the period (such as Greek plays). They do creative writing--pretending they are living in pre-historic times, writing their own Greek play. A take-home essay test is the concluding feature of each unit. Outside speakers, sometimes past Scholars' students, are utilized. Trips to ethnic restaurants (Greek, Italian, German) are a part of the year. The class usually takes an annual trip to Ashland for the plays, perhaps in conjunction with Junior High Scholars, Advanced Placement English and/or the Drama class. One very unusual field trip is always a part of fall term--a trip to Dexter Dam for tool-making in the best prehistoric tradition. Some students may even try to spear a salmon coming up to spawn. This tool-making really improved their identification of stone tools. I have had students point them out to me in many locations after they have had this class.

Having Scholars' open to tenth graders leaves an obvious gap in the program in ninth grade. This gap was filled by one of the "ripple" programs one year after the gifted program was started. In ninth grade students take Accelerated English. This class is open to all students who pass the ninth grade competencies at the end of eighth grade. This has included all the Junior High Scholars' students and usually up to ten additional students. These students will cover the required tenth grade competencies in ninth grade, giving them more elective English options. There is a great deal of writing in this class, essay form is usually covered, and at least one of Shakespeare's plays is part of the reading.

Scholars' II has been offered at the High School, and it completed the history of man up through a futures unit. The class worked in connection with Scholars' I. The study period was a joint one for both classes, so there was much opportunity for interaction. Enrollment was not maintained in Scholars' II for a variety of reasons, and there were problems in scheduling staff. Advanced Placement classes were added to the curriculum to be a senior option after taking Scholars' II. These came into conflict with Scholars' II both in time and scheduling. However, Advanced Placement must be mentioned as a "ripple" effect that opens challenging academic work to a lot of students who have not taken Scholars'. Figure 12 summarizes "ripple"effects at the secondary level. Pleasant Hill offers Advanced Placement classes in calculus, English, U. S. history, French, biology, and studio art.

Gifted Education at the High School Level

Is there a need for gifted programs at the high school level? Claire Tremaine found research data in two California school districts which showed that gifted programs made a difference. Tremaine studied gifted students who had been in a high school gifted program and those who had not.

Some comparisons from the studies of enrolled gifted vs. non-enrolled gifted show:

1. Mean GPA .497 higher

2. Mean SAT verbal scores 53.931 points higher

3. Mean SAT math scores 79.91 points higher

4. 90% of enrolled took SAT test
   56% of unenrolled took SAT test

5. Enrolled took an average of 3.066 other advanced courses
   Unenrolled took .899 other advanced courses

6. 74% of enrolled won 3 or more scholarships
   5% of unenrolled won 3 or more scholarships

Pleasant Hill's experience verifies these findings. In the first years with Advanced Placement, it was mostly former Scholars' students willing to risk the exams. Now more students are taking the exams and last year's results are summarized below:

Scholars		Non-Scholars	
Pass (3-5)	No-Pass (1,2)	Pass (3-5)	No-Pass (1,2)
8	1	5	6

"Pass" is considered a score of 3 to 5 on the exam and "no-pass" is a score of 1 or 2, which is not recognized for college credit by many colleges. These are the results for English Composition, U. S. History and Biology only, as these exams have the most significant writing component which utilizes skills taught and refined in Scholars'.

The one Scholars' student who did not pass was not in the Junior High program because his scores were not high enough. The pool widens at the high school because of increased competition from other classes.

It was thought at one time that with the institution of Advanced Placement classes, grade point averages would drop, and our top graduating seniors might be those who took less challenging class work. This year's top seniors at Pleasant Hill put aside that notion and again verify the California research. There were three co-valedictorians with perfect 4.0 records, a salutatorian with a 3.98 (a B in one semester of typing in ninth grade) and close behind the number five student with a 3.95. All five students had been in the Junior High Scholars' Program, continued with the High School Scholars' Program, and took most of the Advanced Placement classes offered. One is a National Merit finalist, one has a Naval Academy appointment, and another a choice between an Army or Air Force ROTC scholarship. The number of dollars they can achieve in scholarships seems limited only by their willingness to fill out applications, and parental income.

With data like this, it is a concern that while nearly all of the boys from the Junior High Scholars' Program continue on with High School Scholars' less than half of the girls continue. The survey of Advanced Placement results shown above is our second survey showing the difference in test scores between students who choose Scholars' and equally talented students who choose not to participate.

It is difficult to evaluate gifted programs. Students at the 99th percentile on achievement tests don't show much change in test performance. Case histories and anecdotal records put the impact in a personal perspective. This year's five seniors are exciting, but equally exciting is the student who came into the district in fifth grade and was placed in low level learning classes (poor skills). A teacher nominated him for the open selection creative thinking groups (one of the "ripple" options) and that was my first contact with him. His Otis Lennon score showed great potential, not matched, however, by his achievement scores. In Junior High he turned up in Scholars' English. He had poor work habits and many skills gaps. We more or less fought it out for two years, but in the process he gained a true sense of his own ability. He made poor grades in Junior High (we're a "basic" district) because he didn't turn in work. In Accelerated English he started turning in all of his work, but sometimes late and sometimes careless, so was a C student. Now a tenth grader, he's making not a 4.0, but A's in things like Scholars' I and Chemistry I. He was an enthusiastic Outdoor School counselor this spring who mentioned his concern for school work that had to be done as soon as he got back.

Another student was school-phobic in fourth grade. When he entered ILP that year he had to have the teacher approve everyting he did--word by word. In sixth grade he wrote his own play, directed, and acted in it for an ILP Creative Drama unit. He is a risk-taker now, running for school office in eighth grade against very popular girls, and trying to make JV basketball instead of the freshman club in ninth grade.

One girl had never been challenged in school until she had ILP in sixth grade. She's coasted through with easy A's. There were many tears along the way as I tried to help her find some joy in stretching her mind and abilities. At the end of eighth grade she transferred to a larger district. I later received a thank you letter from her, telling me of the essay test she had written that her history teacher said was one of the best he'd seen, and of her placement in an accelerated English class in that larger district. She now seems genuinely excited by learning.

These students may not be the Einsteins and Edisons we are told we overlook in the schools, but they are students who have been challenged to not be satisfied with mediocrity by a program for "gifted." A small district can do this.

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CREATIVE WRITING RESOURCE UNIT

Generalizations: Written communication is an essential skill in our society.
Fluency in producing divergent thoughts can be increased with practice and is a skill that can prove useful in solving problems in society.

Objectives: The student can produce a variety of "new to him" ideas.
The student will demonstrate increased understanding of a variety of written forms.
The student will increase his understanding of need for and improve in practice of basic mechanical writing skills.

Activities	Materials/Resources	Thinking process/ product	Teacher Evaluation
Students: Keep a "day book" for daily experience in putting down thoughts.		Divergent production/implications	
Teacher: Read to students samples of diaries that have become famous or used in other stories and research.	Civil War Diaries Macmillan reading series Diary of Anne Frank		
Provide a minimum of a weekly exercise in developing divergent ideas.	Invitations to Speaking and Writing Creatively by Myers and Torrance Creative dramatics bibliography Rx for Gifted by Stallard and Ingram	Divergent production/transformations	Are the students showing freedom in expressing "wild" ideas?
Students: Invite people skilled in the creative arts to share insights with class.	See p. 6, Student book Myers and Torrance	Evaluation/implications	Be sure to follow up discussions and compare with earlier predictions on creative process.
Research lives of successful poets, painters, sculptors, composers, etc. and see how they obtained and organized creative ideas.	Library--biographies and author reference books		
Teacher: Use idea-producing sessions to develop creative writing opportunities	Invitations to Speaking and Writing Creatively, Myers and Torrence	Divergent production/transformation	

FIGURE 1

Generalization: Number systems are essential to civilizations.
Man has used many ways to keep track of numerical information.

Objectives: The student will interpret and write Egyptian, Greek, Roman, and Mayan numerals as decimal numerals and conversely.

ACTIVITY	MATERIALS/RESOURCES	THINKING PROCESS PRODUCT	TEACHER EVALUATION
1. Introduce Egyptian numeration system. Discuss any apparent limitation of the system.	Dittos: Egyptian numerals, Egyptian Match-up Film: "What are numbers" from ESD	Figural, symbolic/ cognition, convergent, evaluation/units, classes, systems	How many differences can they see between this system and their usual system?
2. Greek numeration system Discuss likenesses and differences with Egyptian system and ours. Predict reason for differences	Dittos: Early Greek Numerals Attic Greek	Figural, symbolic/ cognition, memory, convergent, evaluation/ units, classes, relations, systems, implications	Are students able to see relati between symbols for 5, 50, 500, etc.? Are they seeing differenc and able to give possible reaso
3. Roman Numerals Compare all three systems and their principles and our system	Dittos: a. Roman Numeration System. Can you Break This Code? b. Principles of Roman numerals c. Roman Numeral practice	Figural, symbolic/ cognition, convergent, evaluation/units, classes, systems, implication	Could the students break the c prior to being given informati on the symbols? Have any discovered the lack of place value and resulting limitations?
4. Mayan numerals Discuss what the Mayan had that the other systems lacked (concept of zero) and how this affects the systems	Ditto: Mayan Numeration System	Figural, symbolic/ cognition, covergent, evaluation/units, classes, relations, system, implications	Did the students discover zero concept on their own? Did you give them a chance to do it on their own?

FIGURE 2

INDEPENDENT LEARNING/SCHOLARS PROGRAM

GRADE	TRENT		ELEMENTARY
	1	2&3	4 - 5 - 6
	ENRICHMENT ACTIVITIES	ILP PULL-OUT CLASSES	ILP PULL-OUT CLASSES
"RIPPLE" PROGRAMS	"BROWN BAGGERS"		COMPUTER CURRICULUM DEVELOPMENT CREATIVE THINKING ACTIVITIES BOOK CLUB (OCCASIONALLY)

FIGURE 3

SCHOLARS' PROGRAM LANGUAGE ARTS/ENGLISH

These objectives are to be covered yearly, unless noted as a biennial objective. Some units that are presented in both 7th and 8th grades in the regular program will be only offered every other year in Scholars'. However, any opportunity to reinforce these objectives during an "off" year through speakers or field trips will be utilized. On these occasions the regular language arts curriculum guide should be referred to so that the appropriate objectives are stressed.

Higher Thinking Levels

Concepts: There are a variety of levels of thinking.
With understanding of the levels, depth and expansion of thought can occur.
The cognitive thinking levels can be applied to all types of communication activities.

FIGURE 4

OBJECTIVES	ACTIVITIES	MATERIALS
Higher Thinking Level The student can identify and explain the correct use of the levels of thinking in the Bloom Taxonomy of the Cognitive Domain. The student can identify which thinking level he/she has used in his written work and in class discussions.	Overhead transparency of Bloom Taxonomy and related ones explaining its use to students. Use a transparency of an editorial cartoon and have the students explain its meaning successively covering the more difficult thinking levels. Learning Capsule and Contract forms for independent projects which provide opportunities to verbalize use of the Taxonomy. Filmstrip to review the levels. Regular class discussions on topics of current interest or areas under study. Verbalization of appropriate discussion skills and techniques.	filmstrip: Recognizing and Developing Higher Thinking Skills, Claremont Educatio al Resources Room display of Taxonomy for ready reference. Ditto sheets "Build a High Thought" from Claremont Educational Resources givi handy verbs and products for use by the students. Teacher Resourses: Learning Discussion Skills Through Games by Stanford & Stanford Discussion suggestion from Memphis City Schools Proje CLUE Rx for Gifted by Stellard & Ingram, Claremont Educ.

FIGURE 5

INDEPENDENT RESEARCH PROJECT EVALUATION

During this project I used the following thinking levels in the ways described:

recall

application

analysis

synthesis

evaluation

I learned

Signature

STRUCTURE, FORM, DESIGN

Reading	Writing	Speaking	Enrichment
Utilize local events that tie in to broad theme			Flamenco dance company: pre-performance background on flamenco music--records from local library
"The Western"--short stories and non-fiction		Class discussion and analysis	Western art exhibit
Essay form: read selected essays	From sentences to paragraphs to essay writing		
Research topic related to structure, form, design	Research paper	Oral sharing of research with class Interview techniques for additional sources	Slides to enhance those interested in architecture, and/or students make their own visual aids from their research sources Music to share with class: analyze basic differences between styles (Romantic, Baroque) or form (sonata)
Drama (based on plays being produced locally)			
Poetry	Illustrated anthology of favorite poems Original poetry	Memorize a favorite poem to share with the class	Cutting from Belle of Amherst by local actress Including Shakespeare work being seen as part of "poetry unit"

PAST (Myths and the oral tradition)

Reading	Writing	Speaking	Enrichment
Myths, legends and folk tales of student choice (collection from a culture not previously read) Novel: "*When Legends Die*" by Hal Borland	Analysis of the value systems presented in myths read	Informative speech based on analysis (visual aids encouraged with this presentation) Storytelling of a myth	Audio-visual: Film: "*Myths of the Pharoahs*" Slides from King Tut exhibit Guest speakers: Colleague with slides of Saxon exhibit in the British Museum Local musician specialist in North Indian drums Professional storyteller Music: local concerts that fit the theme (Bloch festival) Records: Wagner opera excerts *Tristan and Isolde* *Lohengrin* *Parsifal* *Ring cycle* Richard Strauss: *Elektra*

FIGURE 7

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36386 Highway 58, Pleasant Hill, Oregon 97401, U.S.A.

COURSE

September

Communication	Word Roots · Latin · Anglo-Saxon · Greek		Written & Oral Re		
Science	· stone tool making · Ancient Astronomy and Math plus · radiocarbon dating		· Aristotle · Aristarchus · Eristhosthen · Plato · Archimedes	Civil Engineering	· Witchcraft · Alchemy · Islamic Sci
Literature & Philosophy	· picture writing · Egyptian Heiroglyphics · Chinese · Phoenician · Greek alphabet · Hebrew · Bible (O.T.)		Homer, Herodotus, Thucydides, Socrates, Euripedes, Aeschylus, Sophocles, Aristophanes, Zeno, Thales, Anaximander, Virgil, Horace, Cato, Caesar		Beowulf, Mar Aurelius, St. A New Testament, Roland, St. Thom. Viking Sagas, (Po Islam. Abelard
Music	· animal sounds - music of current primitive peoples		· Pythagoras & the Physics of Instruments · contemporary Greek music		· Romanesque · Medieval Instr · Gregorian and Ambrosian Ch · Medieval Danc
Art & Architecture	· cave painting · Stonehenge · primitive Shelters	· Symbolic vs. Natural · Pyramids · Mesopotamia · Aegean	Graeco-Roman and Oriental Parallels		· Romanesque · Gothic
Turning Points of History	Pre-History & the Neolithic Revolution	Ancient Near East	GREECE	ROME	Middl Ages
Languages	LATIN			Germ	

FIGURE 9

OF STUDY

June

<table>
<tr><td colspan="6">arch Reports plus Creative Writing</td></tr>
<tr><td>ce</td><td>· Copernicus
· Da Vinci
· Galileo</td><td colspan="2">· Dalton
· Newton
· Classical Physics
· Industrial Revolutio</td><td>· Darwin
· Chemistry
· Industrialism</td><td>· Nuclear Physics
· Biology Genetics
· Computers
· Transportation</td></tr>
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·Cervantes, ·Jonson
·Spenser, ·Chaucer
·Shakespeare, ·Marlowe
·Scholasticism, ·Neo Platoni
·Averroism ·Dante</td><td colspan="2">·Milton, Swift, Voltaire,
Burns, Defoe, Rousseau,
Descartes, Berkeley,
Hobbes, Pascal, Spinoza,
Leibnitz, Locke, Hume,
Kant, Hegel</td><td>·Wordsworth, ·Byron ·Keats
·Shelley ·Coleridge ·Emerson
·Hawthorne ·Thoreau ·Poe
·Dickinson ·Tolstoy ·Shaw
·Ibsen ·Tennyson ·Whitman
·Dostoevsky ·Marx, Engels
·Whitehead ·Bergson ·Mill
·James</td><td>·Mann ·Hemingway
·Heinlein ·Wells ·Conrad
·Joyce ·Kafka ·Eliot
·Faulkner ·Chekov
·O'Neill ·Russel ·Pragmati
·Logical Positivism ·Nietzsche
·Kierkegaard ·Schopenhauer</td></tr>
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,</td><td>Renaissance Dances
&
Pre-Classical</td><td>Baroque</td><td>CLASSICAL</td><td>Romanticism</td><td>RAGTIME
Jazz
Swing
MODERN
(END?)</td></tr>
<tr><td></td><td>Renaissance →</td><td>BAROQUE</td><td>NeoClassical</td><td>Romantic Period</td><td>MODERN</td></tr>
<tr><td></td><td>Renaissance
&
Explorations</td><td colspan="2">1650 – 1800</td><td>1800 – 1900</td><td>1900 – 2100</td></tr>
<tr><td>m</td><td colspan="3">Italian</td><td colspan="2">French</td></tr>
</table>

INTRODUCTION

I. Student research

- A. School facilities
    - 1. School library
    - 2. Classroom books
- B. Off-campus facilities
    - 1. LCC library
    - 2. University of Oregon library
        - a. Main
        - b. Art & architecture
        - c. Science
    - 3. City libraries
        - a. Eugene
        - b. Springfield

II. Student presentations

- A. Student writings
    - 1. Organization
    - 2. Selection of information
    - 3. Writing style for purpose
- B. Student lectures
    - 1. Speaking for thirty minutes
    - 2. Information to be handed out on dittos
        - a. Time-lines
        - b. Biographical information
        - c. Basic outline of report
    - 3. Information to be lectured on
        - a. Anecdotes
        - b. Theories based on information
        - c. Overview

UNIT I - Beginnings of Western Civilization

PURPOSE: Students will understand the decisions that early man made that lead to what is now Western Civilization.

I. Pre-history up to 10,000 BC

- A. Scientific investigations
    - 1. Anthropological investigations on early man
    - 2. Radio-carbon dating
    - 3. Geologic history of the planet
- B. Major achievements
    - 1. Man becoming wide-spread and adapting to all climates
    - 2. Use of fire
    - 3. Use of tools

FIGURE 11

- B. The Arts
    - 1. Painting
    - 2. Architecture
    - 3. Literature
        - a. Chaucer
        - b. Dante
- C. Science and Math
    - 1. Engineering
    - 2. Warfare
- D. Religious Philosophy
    - 1. Heresy
    - 2. Papalcy

UNIT IV - RENAISSANCE (1400 AD - 1600 AD)

PURPOSE: The student will know how the European ideals mixed with the older Roman and Greek ideals to meld into modern Western Culture.

I. Italy

- A. Strength of the city-state
    - 1. Florence
    - 2. Rome
    - 3. Venice
    - 4. Fall of Byzantium to the Turks

- B. The arts
    - 1. Sculpture
    - 2. Painting
    - 3. Architecture

- C. Science and Math
    - 1. Compass and navigation
    - 2. Inventions
    - 3. Engineering

- D. Philosophy
    - 1. Protestantism
    - 2. De Carte
    - 3. Counter-reformation
    - 4. Concept of the individual

INDEPENDENT LEARNING/SCHOLARS PROGRAM

JR. HIGH 7 - 8	9	HIGH SCHOOL 10 11 12
SCHOLARS ENGLISH & MATH		SCHOLARS' I SCHOLARS' II (WHEN ENROLLMENT IS SUFFICIENT)
	ACCELERATED ENGLISH	ADVANCED PLACEMENT ENGLISH, BIOLOGY, U.S. HISTORY, CALCULUS, STUDIO ART

FIGURE 12

LEADERSHIP AS IT RELATES TO GIFTED EDUCATION

Dorothy A. Sisk

Interest in identifying and developing leadership ability has been of considerable concern throughout history. The earliest concentrated efforts were accomplished by Aristotle and Plato and the most recent effort has been initiated by the 1983 National Business Consortium which has as an objective the tapping and identifying of leadership and creativity in today's gifted youth.

The continuous search for effective leaders is important to all organizations and impacts on our lives in government, education, churches, and business. However, translating the historic concern for the identifying and developing of effective leaders into practice has been affected by the conceptualization and definition of leadership. In examining leadership Bass, (1981) in the Handbook of Leadership concluded that there were almost as many definitions of leadership as there were persons who tried to define the concept. Some representative definitions are as follows:

> Leadership is the process of influencing the activities of an individual or a group in efforts toward goal achievement (Hersey & Blanchard).
>
> Leadership is an influence process whereby O's actions change P's behavior and P views the influence attempt as being legitimate and the change as being consistent with P's goals (Kochan, Schmidt & DeCotiis).
>
> Leadership is an interaction between persons in which one presents information of a sort and in such a manner that the other becomes convinced that his outcomes (benefits/costs ratio) will be improved if he behaves in a manner suggested or desired (Jacobs).

The variety of definitions can be traced to a number of theories about leadership. An examination of these theories would be beneficial in not only establishing educational programs to identify and nurture leadership as a type of giftedness, but in clarifying the historical base and need for leadership development.

Trait Theory of Leadership

One of the oldest theories of leadership is the trait theory. It can also be called the Great Man theory and traced to the early ideas of Aristotle, who thought that leaders were born. For years, the trait theory was the accepted theory in psychology and trait lists were offered as qualities that differentiated leaders from nonleaders. Stogdill, a researcher in leadership of international renown reviewed 124 studies of personal factors thought to be associated with leadership and stated that he was not able to substantiate the personality trait theory. The problem was that leadership was found to be active and not merely the possession of traits. In fact, the more Stogdill studied the trait theory, the more convinced he became that there was a working relationship among members of a group and that the leader acquired status through active participation and demonstration of his or her ability to complete tasks.

As a result of his work, Stogdill identified five personal factors which appeared to interact with situational factors. These personality factors were capacity, achievement, responsibility, participation and status. The situational factors were mental level, status skills, needs and interests of followers and objective to be achieved.

A more recent example of a trait theory based research study was initiated by American Telephone and Telegraph Company (AT&T) by Bray, Campbell and Grant in 1974. After eight years, a group of managerial candidates' progress in terms of advancement into middle management was correlated with the candidate's initial assessment scores on a variety of traits. The Most Effective Trait Predictors for Managerial Advancement are displayed in Table 1.

Table 1

Most Effective Trait Predictors for
Managerial Advancement at AT&T

Oral Communication Skill (Giving reports to small groups on well known topics)

Human Relations Skill (Leading groups to accomplish tasks)

Need for Advancement (Desire for Promotion)

Resistance to Stress (Work performance stands up under stress)

Tolerance of Uncertainty (Tolerates unstructured conditions)

Organizing and Planning (Organizes and plans work ahead)

Energy (Maintains high level of work activity)

Creativity (Solves management problems in novel ways)

Range of Interests (Interested in a variety of fields)

As the researchers studied the various traits, they discovered that the list of traits interacted and depended on the work or leadership setting. In one situation, the most valued trait was identified as human relations skills, especially if the activity were mostly maintenance or strengthening of the group and did not involve a task to be completed or the achievement of a specific goal. However, when goals and tasks were involved, other skills such as organizing and planning came forth as key traits.

Many of the gifted programs that have chosen to examine leadership as a phenomenon consisting of specific behaviors or traits have used task roles in group dynamic activities. Task Roles as used in the Pinellas County Gifted program in St. Petersburg, Florida are as follows:

Table 2

Task Roles

Information/Opinion Giver - shares facts and relevant information, gives suggestions, ideas and opinions.

Information/Opinion Seeker - seeks relevant information, facts, asks for suggestions, ideas and opinions.

Initiator - starts tasks and suggests procedures for getting task done.

Consensus or Synthesizer - polls group to seek agreement and prepare members for decisionmaking.

Organizer - keeps group on task and calls them back to schedule.

Clarifier - Interprets ideas and suggestions; uses examples to gain more insight and understanding and defines terms.

Recorder - keeps records of group decisions and suggestions.

Summarizer - periodically synthesizes suggestions and offers a decision for the group to consider.

Energizer - Prepares room, materials and equipment. Enthusiastically watches time for breaks and monitors movement from room to room if necessary.

Task roles such as the facilitating ones mentioned above help mobilize a group to complete a task. However, there are task roles that can be hindering. Some of these are roles such as the playboy-playgirl who sees a meeting as a social setting to tell jokes and have a good time; the talker who excessively talks mostly about their own ideas and impedes the group flow of ideas through interruptions; the non-participant who sits outside the group and shows little interest in the work of the group; and the Instant Decision-maker who jumps at the first moment for decisionmaking and values speed rather than discussion.

Equally important are the Maintenance Roles which are listed from the same gifted program under the direction of Rouse and reported in the 1983 Florida state report. The Maintenance Roles are listed in Table 3.

Table 3

Maintenance Roles

Compromiser -	offers opportunity for compromise and openly admits when they are wrong; works for group cohesion.
Facilitator -	shows regard for others, gives recognition and is responsive to others; gives others chance to participate.
Reflector -	reflects the mood or group feelings to the group; freely shares own sense of involvement and feeling level.
Gatekeeper -	works to keep communication flowing; encourages total participation and identifies ways to keep all participating.
Observer -	notes the group process and gives report on observations with emphasis on identifying hindering roles.
Harmonizer -	checks to see if people in the group have talked about differences and seeks to minimize disagreement.

Just as with task roles in which there are helping and hindering roles, in the above positive maintenance roles, there also exist helping and hindering roles. Some of these are the Questionner, who questions and probes members to the exasperation level and puts down others' ideas; the Conformist, who agrees with whatever action is being taken at the moment, shifting allegiance as they see fit; the Emoter who expresses feelings and vents their emotion at the expense of the group; the Special Interest Member, who seeks the leadership role and secures one or two supporters for their ideas and special interests regardless of the group task; and lastly, the Negative Individual, who sees nothing good in the group and disagrees with all tasks.

Leaders should be familiar with all roles and be able to assume the roles as needed. Still another way of looking at leadership is to conceptualize leadership as that of a style.

Leadership Styles Theory of Leadership

The classic work in leadership styles was done by Lewin, Lippit and White in 1939. They classified patterns of leadership into democratic, autocratic and laissez-faire.

Democratic calls to mind phrases like power to the people, situations that are fair and just, the majority votes and all have a chance to offer opinions; autocratic calls to mind authoritarian dictatorship modes and the call for blind obedience to leaders; and lastly, laissez-faire represents situations where there is no leader, little or no structure is visible and confusion and chaos abound.

Lewin et. al's work was expanded by others such as Tannenbaum, Wescher and Massarik (1961) who viewed leadership on a continuum of leadership behavior with labels such as the following:

```
           Boss                                Subordinate
     Centered Leadership                   Centered Leadership
     |_________|_________|_________|_________|_________|_________|
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Still another example of leadership style as a theory is the work of McGregor (1960) who identified two management tasks. He called one the traditional view or Theory X which sees power stemming from position and views subordinates as lazy and unreliable. The second he called Theory Y with leadership being given to the group and people viewed as being self directed and creative, if motivated properly.

It can be quickly noted that leaders using either Theory X or Theory Y would approach a group in entirely different ways. McGregor's theory also is congruent with the authoritarian vs. democratic approach, although he did introduce several refinements.

The refinements consisted of viewing leadership as a relationship affected by four major points: (1) the characteristics of the leader; (2) the attitudes, needs and other personal characteristics of the followers; (3) the characteristics of the organization, such as its purpose, its structure, the nature of the task to be performed and lastly (4) the social, economic and political milieu.

McGregor's work in the 60's can be viewed as a forerunner to the last theory of leadership to be highlighted, that of Situational Leadership.

Situational Leadership Theory

In this theory or approach individuals are viewed as having leadership ability that emerges in appropriately called for situations. Researcher, Gibb (1969) stated that leadership was an interaction of the social situation and personality. In a similar vein, another researcher, Hollander (1964) stated that leadership should be viewed as a relationship between people exerting influence and those who are influenced. Lastly the work of Blake and Mouton (1964) placed a three dimensional approach to leadership for consideration. They identified concern for production and concern for people on a grid that represented a range of interactions or the third dimension.

One of the more recent situational models of leadership is that of Hersey and Blanchard (1969). In their model, they identified task behavior, relationship behavior and effectiveness.

The leader behavior as task behavior was defined as the extent to which leaders were likely to organize and define the roles of members of their group (followers); to explain what activities each is to do and when, where, and how tasks are to be accomplished; and characterized by endeavoring to establish well defined patterns of organization, channels of communication, and ways of getting jobs accomplished.

Leader behavior as relationship behavior was defined as the extent to which leaders were likely to maintain personal relationships between themselves and members of their group (followers) by opening up channels of communication, providing socioemotional support, "psychological strokes" and facilitating behavior.

The situational variable in the model proposed by Hersey and Blanchard was that of follower maturity. Maturity was defined as the capacity to set high but attainable goals (achievement/motivation), willingness to take responsibility, and education and/or experience. Maturity in their model was assessed in relation to a particular task, for one could be mature in relation to one task, but immature in another.

According to Hersey and Blanchard, the maturity of the followers interacts with the leadership behavior that is required. As subordinate maturity increases, the leader should decrease the amount of relationship oriented behavior. This theory is best explained with the following chart:

Hersey and Blanchard Situational Model

M1 -	immature subordinates	require →	task oriented behavior
M2 + M3	moderate mature subordinates	require →	relationship oriented behavior
M4 -	Mature subordinates	require →	delegated responsibility with little supportive behavior

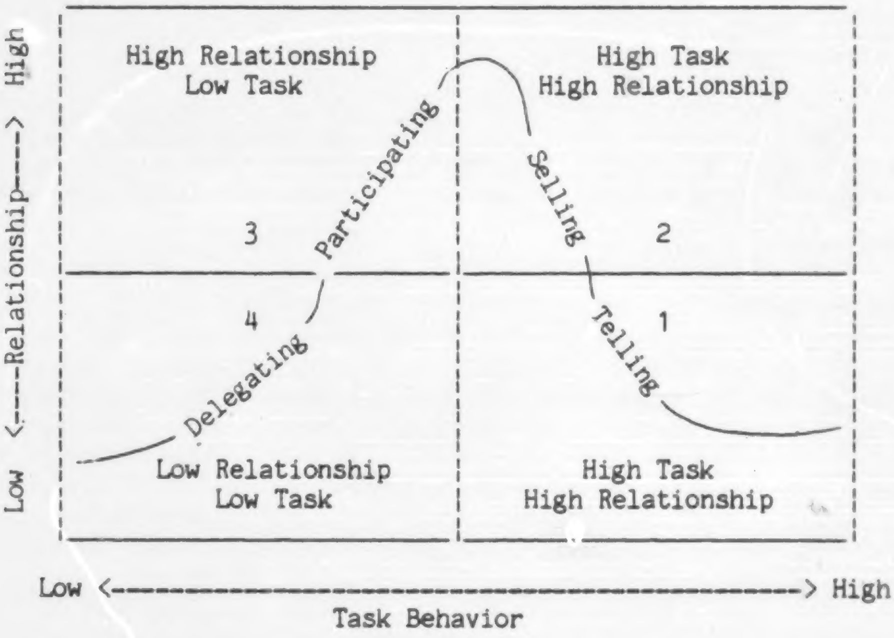
In examining the Hersey and Blanchard Model, it is easy to see how frustration comes about between leaders and followers. Imagine how a follower feels knowing his or her job quite well and demonstrating proficiency, being constantly beleaguered by a task oriented behavior leader calling for "Check Point Charlies" at each step. Or conversely, imagine an immature follower being thrown entirely on their own to sink or swim in a new job with a leader displaying little relationship oriented or task behavior.

Hersey and Blanchard define task behaviors and relationship behaviors in a way that complements the task and maintenance roles on pages 3 and 4. Many of the skills involved in the roles of task and maintenance are needed by the leader to accomplish effective leadership. The behaviors are as follows:

Task Behaviors	Relationship Behaviors
Define and organize role of followers.	Determine ways to open channels of communication between leader and follower.
Determine the tasks that need to be done.	Delegate responsibility.
Set up when, where, and how work will be done.	Provide opportunities for followers to realize their potential.
Establish well defined patterns of organization, channels of communication, and ways to accomplish work.	

As can be noted in the above task behaviors and relationship behaviors, the situational leadership model assumes that the leader is not operating in isolation of the group. Leaders and followers interact and are influenced by interdependent factors. These factors include the goals, objectives and norms of the organization; the demands inherent in the leader's job and level in the organization and the expectations of those to whom the leader is accountable (bosses) and those for whom they are responsible (followers) and those with whom the leader is equal (colleagues).

Still another way to look at the situation model is in Figure 1. The task behavior is along the bottom of the figure and the relationship behavior is along the left hand side. Look at the line from the lower right hand corner toward the left, that is the direction a leader should move to work with followers. The goal is to start at the point the group members are and adapt the leadership style to the group's needs.



High Relationship
Low Task
High Task
High Relationship
Participating
Selling
3
2
4
1
Delegating
Telling
Low Relationship
Low Task
High Task
High Relationship
Low <----Relationship----> High
Low <--> High
Task Behavior

Figure 1.

The leadership in the telling block calls for more of the task behaviors and more structuring of a group's activities to facilitate the completion of the task. As the group progresses in both experience and ability, the leader can move to a selling mode with a balance of task and relationship leadership behaviors. The third stage of a leader's style is participating and it is here that the relationship dimension is emphasized. When a leader moves into the fourth stage, delegating, the leader has low relationship and low task behaviors. At this stage, the group handles the task and meets their own social and emotional needs.

The leader's point on the cycle is determined by the group's abilities, knowledge and attitudes. Hersey and Blanchard refer to these needs as maturity and divide maturity into two types, job and psychological.

The maturity characteristics are as follows:

Job Maturity Characteristics	Psychological Maturity Characteristics
Past job experience	Willingness to take Responsibility
Understanding of Job Requirements	Achievement Motivation
Job Knowledge	Commitment
Problem Solving Ability	Persistence
Ability to Meet Job Deadlines	Work Attitude
Ability to Take Responsibility	Initiative
Follow-through Ability	Independence

As the leader, the major task is to assess the job maturity and psychological maturity of the group and adapt the leadership style accordingly. If the followers are low in maturity, the most appropriate style would be quadrants 1 and 2. Moderate maturity would require a style in quadrants 2 and 3, and high maturity would require a style in quadrants 3 and 4.

In their recent book, The One Minute Manager, Kenneth Blanchard and Spencer Johnson, M.D. (1982) succinctly discuss leader behavior in three steps, (1) the one minute goal setting, (2) the one minute praise and (3) the one minute reprimand. In this delightful parable of a young manager looking for an effective manager, these three steps are illustrated.

This situational theory has wide implication for leaders in all areas and it is well worth our close examination. In this theory, every leader engages in one minute goal setting with followers to insure that there is mutual agreement on goals. However, with a mature employee, these goals can be submitted independently by the employee, while conversely the immature employee or follower would have the goals established in a face to face interaction with the leader, with emphasis on direction and support.

The one minute praise as defined by Blanchard and Johnson is described as the leader's task of finding the follower doing something well and giving immediate feedback on the specific behavior. The one minute reprimand, on the other hand is given when an employee is incorrect or a follower does the task incorrectly. The action of the leader is to be as specific as possible as concerning the error, followed by a 30 second expression of how the leader feels about the behavior, and lastly followed by a reinforcing statement of why the leader is pointing out the error—that is, the follower or employee has great value and potential to the organization. Yet once again this model stresses that the reprimand is only given to a mature employee and not to a trainee. If a trainee is incorrect or confused, the leader should go back to the top of the model and establish the goals and actions of Step 1, and clarify the goals as necessary steps to successfully complete the task. An activity based on the One Minute Manager philosophy as used in a summer leadership seminar for gifted is as follows:

The situation is that Mr. Lane, a twenty-five year employee with Ace Trucking Inc., whose major responsibility is to prepare budget reports has failed to get his report in on time. You as the leader know that he understands the task as he is a mature employee and prepared his weekly sheet of objectives which were reviewed and accepted. You are responsible for a one minute reprimand. What would you say?

In examining a given response, one would note if Mr. Lane were told specifically that the manager was upset because his report was late, questions would be ones such as the following: Did you tell him how you felt about this behavior, how it inconvenienced you and lastly did you tell him the reason that you were upset is that he is one of the best employees that Ace Trucking has and you expect more of him, and you rely on him.

In the one minute reprimand, particularly if the employee is a mature, experienced individual, it is important that you be specific on the incorrect behavior, that you state your feelings and end with the statement that Lane is a great employee. In this way, employees do not go away with as negative feelings about the reprimand. After all, isn't Lane one of the most valuable employees that Ace Trucking has?

The One Minute Manager's three rules have implication for any leadership behavior. Another exercise for use with an adolescent is as follows:

John is on the varsity football team and plays quarterback for the team. The night before the big game, you find him sitting in a car in front of the house drinking beer with his buddies. You are responsible for a one minute reprimand. What do you say?

Again, check the response for its specificity, the feelings, and the praise. It is hard to praise when one is angry, but that is essential according to Blanchard and Johnson if the technique is to work.

With these three theories of leadership in mind, it is now necessary to examine identification and if at all possible to endeavor to have congruency between the theoretical framework and the identification procedure.

Identification and Measurement of Leadership

Early investigations of leadership used unitary and simple methods of identifying leaders. Basically there were five methods: (1) observation of behavior in group situations, (2) choice of associates or voting, (3) nomination or rating by qualified observers, (4) selection, rating and/or testing of persons occupying positions of leadership, and (5) analysis of biographical and case history data.

However, as the measurement field has evolved to the use of multiple assessment techniques for identification and measurement, one test or method has also been found insufficient to assess leadership abilities. Currently, several methods and sources of information are needed to systematically conduct the identification process. If one is using the trait theory as a framework, a complex profile of the individual using personality inventories such as the California Personality Inventory, the Minnesota Multi-Phasic Inventory and the Edwards Personal Preference Schedule might be used. Projective tests such as the Rorschach might also be supplemented. Still another instrument that might be used would be the Myers-Briggs Type indicator. This instrument is based in part on the theory of Jung and describes four psychological types: (1) extroversion/introversion, (2) sensing/intuition, (3) thinking/feeling, and (4) judging/perceiving.

Information from the above instruments would yield a multiple assessment profile that would complement the trait theory.

If the leadership style approach were chosen as the theoretical framework for a gifted program, behavior oriented measurement could be obtained through using observational checklists with informal and formal groups. The Leader Behavior Description Questionnaire developed by Stogdill and Coons (1970) could be used as well as self report checklists designed to assess task-maintenance dimensions.

Other instruments to assess leadership styles are attitudinal measurements. The Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) has been used in many leadership development programs to measure the attitudinal component. It is based on the assumption that all human interaction can be divided into three categories: inclusion, control and affection. Since definitions of leadership include the ability to influence others and to maintain positive group relations, these dimensions are most important to the assessment of leadership styles.

If one were to choose situational leadership as the theoretical basis, the Hersey and Blanchard Leader Effectiveness and Adaptability Description Questionnaire (LEAD) might be appropriate. The LEAD gives the individual's perception of his or her predominant leadership style in terms of task behavior and relationship behavior.

Still another way to assess situational leadership would be to establish given group dynamic situations and observe the interaction and action of given individuals. This information would supplement that gathered by the LEAD which is more objective.

The variety of instruments discussed can be found in a number of current leadership programs. An examination of several of the programs should prove effective in clarifying the relationship between the assessment procedure and the total program effort.

Leadership Development Programs

One of the more well known leadership programs for gifted students is the Executive Internship Program for high school students. This program was started under the direction of Sharlene Hirsch and has been replicated in twenty-five states in over two hundred programs. The high school students are placed as interns with key decision makers in business, government, the arts, the media, sciences and other related fields. The purpose of the program is for high school students to experience organizational leadership in a real setting. They spend four days with their mentors and the fifth day is spent in seminars for management, decision making and administration.

The format for the seminars is based on the Harvard Business School case study method. The identification procedure for the Executive Internship program includes a profile of information on the student's maturity, academics, past leadership accomplishments and recommendation by teachers. Students and sponsors are interviewed and an appropriate setting is chosen that will meet the needs of both the sponsor and the student.

Many leadership programs also have been developed that use a consortium basis. One such program was described in the Gifted Children Newsletter in May 1982. The project is entitled Project Odyssey and involves four high school districts in New Jersey. The program consists of an internship program, but before the students serve as interns with community professionals, they are given a background in the more academic skills required for leadership such as communications, problem solving and decision making skills.

In Des Moines, Iowa a similar approach was used in Project LEAD for seventh and eighth grade students who shadowed resource people in the community in an effort to learn about leadership qualities and to gain insight into various leadership styles.

Still another fine example of a leadership program is reported by Evans (1980). The program is called Leadership in Action youth program and concentrates on developing leadership skills through practice and experience. The program culminates in a summer institute which lasts four days in which opportunities are given for the students to become familiar with the characteristics of the American business enterprise system with emphasis on agricultural co-operatives.

Commonalities in Leadership Programs

The number of actual leadership programs that have been reported in the literature and in state and federal program reports by educators of the gifted have several common strands that are worth noting. These are as follows: (1) to provide for exploration of leadership, (2) to examine leadership styles, (3) to experience leadership in action, (4) to become aware of one's own strengths and weaknesses and (5) to evaluate one's potential in view of heightened awareness.

All of the above aspects of leadership programs are important, but the ability to evaluate themselves, situations and the interrelation of situations and persons is essential for gifted students. Bleedhorn (1979) states the importance of this self evaluation as a type of futuristic leadership in which students look ahead, make predictions, consider alternatives and then participate responsibly and synergistically in creative problem solving. She further delineates these skills as Futurizing, Creating and Knowing.

Steinruck and Steinruck (1982) identify three important aspects of leadership programs that appear to complement those of Bleedhorn. They suggest that leadership training cannot be solely left to the schools, but must involve a co-operative effort between the school, home and community. The emphasis here would be to transfer the knowledge gained at school about leadership to the community and home. To accomplish this objective, students engaged in a Massachusetts leadership program regularly attend the state board of education and have been given outstanding commendation for their participation.

The second point of the Steinrucks (1982) is that there needs to be a safe place for students to take risks where they can explore leadership and leadership styles without jeopardy and lastly that teachers must be models. It is this last point that is essential and bears further comment. If teachers are to develop leadership, do they also need to be leaders?

The Development of Leadership in Teachers

Passow (1982) states that he views leadership as a group related process and reports that Teachers College at Columbia University has four primary objectives in training leadership in teachers of the gifted: (1) curriculum development, (2) research, (3) teacher education and (4) administration. Passow further describes the end product of such an education as a practioner-scholar as one who not only has a sound historical, theoretical, conceptual background, but one who has acquired the motivation and the skills to study the consequences of his/her actions. In addition, the leader in the field of the gifted would be an inquirer, constantly inquiring in a co-operative style with others as to the value and consequences of plans and their implementation.

The above described practioner-scholar is similar to the leader as described by Bleedhorn (1979) and the leader as envisioned by the leadership programs.

In a recent study Sisk (1983) found in examining successful teachers of the gifted who were considered leaders by their administrators and co-workers, that there were a number of teaching behaviors that could be identified which delineated successful teachers from non-successful teachers. These are depicted in Table 4:

Table 4

Successful Teachers of the Gifted
Teaching Behaviors

*Develops a flexible individualized program
*Creates a warm and permissive atmosphere in the classroom
*Provides feedback
*Uses a variety of teaching strategies
*Respects personal values
*Respects creativity
*Stimulates higher order mental processes
*Respects individual and personal integrity

Each of the teachers nominated had received excellent in their teacher evaluations and had demonstrated leadership in developing curriculum, in conducting classroom research and in community action programs.

In addition to the teaching behaviors, a number of personal and professional characteristics also distinguished this group of 100 teachers. The characteristics are depicted in Table 5.

As a group, the teachers were also described as sensitive to others, flexible, enthusiastic, intuitive, committed to excellence and desiring to continue learning. They described themselves as understanding and accepting themselves and feeling responsible for their own behavior. Lastly they displayed intellectual interest and literary and cultural interests.

In interviewing the supervisors of the successful teachers, it was apparent that they were synergistically involved with the teachers and many of the supervisors displayed many of the characteristics of successful mentors. In talking about their teachers they were empathetic, encouraged them to take risks, facilitated learning and action by the teachers and demonstrated a valuing and preference for analytical problem solving and creative thinking.

Table 5

Successful Teachers of the Gifted
Personal/Professional Characteristics

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*To guide rather than pressure
*To be democratic rather than autocratic
*To focus on process as well as product
*To be innovative and experiential rather than conforming
*To use problem solving rather than uninformed conclusions
*To seek involvement of others in discovery rather than telling

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Leadership Challenge for the Future

If educators look to the future as an opportunity to develop leadership as a type of giftedness in their students, they must be aware of the ten new trends of directions as identified by Naisbitt (1982) and to think of how these trends influence educational curriculum and decision making. Briefly these trends are as follows:

Ten Megatrends

industrial society ----------------> information society
forced technology -----------------> high tech/high touch
short term objectives -------------> long term objectives
national economy ------------------> world economy
centralization --------------------> decentralization
representative democracy ----------> participatory democracy
institutional help ----------------> self help
hierarchies -----------------------> networking
north -----------------------------> south
either/or -------------------------> multiple options

In examining the above ten megatrends as defined by Naisbett (1982) no one can deny that we are living in an exciting time and the future is there for us to create and form. Inherent in the above trends are curriculum questions and directions that could be both interdisciplinary and dynamic. Other applications would be to work with gifted, for example moving them from either/or thinking to multiple options by providing multiple experiences and to break down hierarchies that exist in schools by instituting networking and providing these experiences for students.

Last month the University of South Florida held a Futures conference and invited educators and students to participate. There were no distinctions made between any of the attendees and all had ample opportunity to hear lectures by futurists such as Jean Houston, Charles Weingartner and Bob Samples and then experience activity periods and small group discussions with them. The feedback from the students was that it was one of the few times they had been provided accessibility to speakers and given opportunity for interaction with full acceptance as adults. The students had been given affirmation that they had potential and in a sense that is what leadership and leadership development is all about, that of empowering others.

A fitting closing for this paper would be a quotation from Arthur C. Clark (1973):

> . . . we are living at a time when history is holding its breath, and the present is detaching itself from the past like an iceberg that has broken away from icy moorings to sail across the boundless ocean.

The challenge for leadership is there, the opportunity and time for action is now. Those of us who are advocates for education of the gifted need only to step forward and become involved and committed in developing leadership in the gifted students and in ourselves.

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INTEGRATING CONTENT AND PROCESS IN THE
TEACHING OF GIFTED STUDENTS

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One of the phrases heard most often from teachers and other educators of the gifted is "I teach the children how to think, not what to think!" The individual will continue with an explanation of the importance of process and the lack of importance of content, lamenting the fact that other educators are so concerned with how much children learn about math, science, social studies, language arts, and other disciplines.

Certainly, the process is important, and it is important that children, especially those who are gifted, learn how to think as a result of their school experience. The development of high levels of reasoning has been neglected in many of our schools. One example of such neglect is the fact that it has been found that only 30 percent of entering freshmen at one major university in the Southwest can reason at the formal operational level (Beam, 1981). Other studies have consistently shown that between 30 and 50 percent of late adolescents succeed at formal operational tasks (Kohlberg & Gilligan, 1971). Piaget (1963) suggested that children achieve this level of cognitive development at approximately age 11. Researchers have repeatedly found that even though one cannot teach concepts at a lower stage that children know at a higher stage of development (Kohlberg & Mayer, 1978), educators can arrange an environment that will facilitate cognitive growth so that students achieve the levels they are capable of achieving (Blatt, 1969; Rest, 1974; Sullivan, 1975; Taba, 1964, 1966; Ashton, 1978). Positive change, or cognitive growth, occurs through children's active interactions with the environment. They need opportunities to construct their own reality, organize the information they encounter, and draw their own conclusions. Gifted students need to use their advanced levels of reasoning, receive feedback and critiques from the teacher, and then improve their reasoning. The teaching techniques that develop thinking skills and move children from one level or stage of cognitive development to the next are generally those labeled "process" or "how to think" activities.

Although the process is important, and should continue to be emphasized, educators of the gifted have often placed so much emphasis on process that they have neglected the development of ideas/conclusions in the academic disciplines and the teaching of important concepts necessary as a foundation for further learning and creativity. One of the most extreme examples of this neglect is a program in the

Southwest in which students are selected for a gifted program because of their high achievement in science. They are pulled out of the science class to be taught and to spend time playing chess. As one might expect, they often only remain in the program for a year because at the end of the year, they no longer qualify for the program since their learning in the subject that initially qualified them for the program has been neglected. Even though this is an extreme example, numerous similar instances could be cited in which the gifted program is criticized heavily because the children spend all their time playing thinking games, doing logic exercises, and doing creative thinking exercises that have seemingly no relationship to the learning of academic concepts. As Jim Gallagher has often stated "gifted children need something to think about!"

The teaching of processes, or how to think, must be combined with the teaching of important ideas and information. Even Parnes (1966; 1967), who is known for his Creative Problem Solving Process, emphasizes the importance of an information base in the development of creative products. He explains that creative behavior is a function of knowledge, imagination, and evaluation, and that sophisticated, creative products are seldom, if ever, developed by those who have not achieved a high level of understanding of the area in which they are working.

When dealing with the gifted, or when attempting to develop higher levels of thinking, not just "any old content" will do. The content that forms the basis of the teaching process must be as rich and as significant as possible. Taba (1962) suggests that thinking skills can be taught through any subject matter, but that it is impossible to separate content from process. The "richness" and significance of the content with which children work will affect the quality of their thinking as will the processes used. She further suggests that there are certain "thought systems" in each discipline, and that these systems contain both content and process. The examination of thought systems in the various disciplines would be an important activity both for teachers in the development of teaching strategies and for students as a part of the learning process.

Requirements for Content

Maker (1982a) has established certain requirements that must be met by content that becomes a part of the curriculum for gifted students: a focus on abstract ideas and concepts, complexity of ideas and concepts, and an organization of facts and information around key concepts or ideas that facilitates economy in the learning process. With regard to the actual categories of content, she suggests a systematic sampling of major branches of knowledge in addition to the study of creative, productive people and methods of inquiry used in the various branches of knowledge studied.

When developing the content to include in a curriculum for gifted students, it is essential that content experts be involved in reviewing and commenting on the significance, usefulness, and validity of the ideas to be taught. Teachers who must be familiar with many different disciplines cannot be experts in every area they teach, so the advice and assistance of such experts is necessary. Bruner (1960) suggests two criteria for use in making decisions about the inclusion of content: (1) when fully developed, is the concept worth being known by an adult? and (2) having known it as a child, does a person become a better adult? If the answer to either of these questions is negative or ambiguous, the material is "cluttering" the curriculum.

Some examples of key ideas that have been reviewed by experts and included in curriculums for the gifted are the following:

Language Arts

Humans use language for a variety of purposes, including the following: to entertain, to persuade, to inform, to celebrate, to judge, and to solve problems.

Science

Patterns of regularity exist in our physical and living environments. Discovering, measuring, describing, and classifying these patterns is the business of science.

Social Studies

Science and techology are accelerating the rate of change in the world, not only generating data about the earth and human existence, but also providing an expanded range of choices available to human beings in lifestyle, ethnics, medicine, environmental modifications, conflict resolution, nuturition, etc. Whether these choices will be made in the best interests of humanity depends upon the ability of individuals and institutions to forsee their ramifications.

Mathematics

The use of mathematics is interrelated with all computation activities. Everyday situations can be translated into mathematical expressions, solved with mathematics, and the results can be interpreted in light of the initial situation.

Requirements for Process

The processes used in programs for the gifted must also meet certain requirements (Maker, 1982a). They must emphasize higher levels of thinking (i.e., the use rather than acquisition of information); must be open-ended, both in the design of the activities and in the attitudes of the teacher implementing them; must develop inductive reasoning processes through discovery whenever possible; should require students to explain their reasoning as well as provide their conclusions; should permit students to choose topics to study and methods to use to the extent that students are self-directed in their learning; should encourage and permit interaction in group situations; and must be paced rapidly so that students do not become bored. To maintain interest and develop a variety of thinking skills, teachers should also employ a variety of methods, including discussions, lectures, learning centers, simulations, field trips, committee work and projects.

In the development of process plans for a curriculum for gifted students, there is a variety of models available. Certain models are more appropriate than others for use in programs for the gifted because they meet many or most of the process requirements listed above (Maker, 1982b), and because they are adaptable to and compatible with each other and with the goals of programs for the gifted. These approaches include those developed by Bloom (1956), Krathwohl (Krathwohl, Bloom, & Masia, 1964), Bruner (1960), Guilford (1967; 1972), Kohlberg (1966), Parnes (1977), Renzulli (1977), Taba (Institute for Staff Development, 1971a,b,c,d), Taylor (1968), Stevenson, Seghini, Timothy, Brown, Lloyd, Zimmerman, Maxfield, & Buchanan (1971), Treffinger (1975), and Williams (1970). Other models also exist, but are less well-known and not used quite as frequently [e.g., Conceptual Blockbusting (Adams, 1976), The Purdue Three-Stage Model (Kolloff & Feldhusen, 1981: Flack and Feldhusen, 1983)]. Thus, there is not as much information available on their effectiveness or adaptability.

The use of one particular model as a basis for the development of processes, although common, is not necessary, and is usually not desirable since no one model meets all the process requirements for programs for the gifted. The different approaches have different strengths and weaknesses which are directly related to their purposes and reasons for development. Thus, the most effective process plans will combine several models to achieve the desired result. Use of models is strongly encouraged, however, rather than a "hit-or-miss" approach because models have been tested, refined, and constructed as ways to systematically and appropriately develop certain thinking skills in children. An entirely eclectic, or a "hit-or-miss" approach does not have the background of research and development that can suggest its potential for success in achieving program goals related to the development of abstract reasoning skills or "how to think" in gifted students (Maker, 1982b).

In a discussion of ways to implement Taylor's (1968) multiple talent approach, Maker (1982b) gives an example in which Taylor's category of forecasting is combined with Taba's (Institute for Staff Development, 1971c) questioning strategy for application of generalizations.

> In the next activity, students are asked to extend their thinking about the present activity and to predict what might happen in a new situation based on what happened

in the previous experiment: "Suppose that the volcano continues to erupt at least twice a month with about the same force as in the past. What do you think the health of the local residents will be like in five years?" After allowing the students to think for a few minutes, the teacher should ask the following questions in the order listed:

Step 1. What do you think might happen to the local residents? (List all predictions, only stopping the flow to seek clarification of unclear ideas.)

Step 2. Why do you think this might happen (that is, what were some of the results of your experiment that led you to believe that might happen)? (Ask for reasons for all predictions.)

Step 3. What other conditions would be necessary, both before and during this time, to make this prediction come true? Why would that be necessary? (Ask for conditions and reasons for as many of the predictions as possible.)

Step 4. Suppose all the conditions you listed as necessary did happen and this prediction (select a few medium-range predictions from the list) did come true. What would happen then? (Follow the same procedures as in number three with each of the new predictions.)

Step 5. Based on this discussion and what you already know, what would you conclude would be most likely to happen to the health of the local residents in five years? How did you reach this conclusion? Why did you conclude that would be the most likely result?

During this discussion, the teacher should be an active listener, noticing the types of conditions and consequences listed by students. He or she should make certain the students consider the human element (social awareness), patterns or chains of cause-effect relationships (conceptual foresight), and possible changes that might occur that would affect the predictions (penetration).

The Taylor and Taba strategies are combined because Taylor's model presents some very good guidelines for identifying particular kinds of talent, such as forecasting, but does not provide methods for teacher questioning, and a questioning sequence that has been validated as a successful way of developing abstract reasoning skills pertaining to the ability to make predictions. Essentially, the Taylor model provides the overall focus for the activity, but Taba's strategy provides the specific questions.

Meaningless Content versus Meaningful Content

As one might expect logically, it is possible to separate content from process, but it is not possible to entirely separate process from content. If one examines the two examples given in this paper, the meaning of the above statement can become clear. The examples of content (p. 3) do not suggest or denote any particular kind of process to be used. However, the example of process (p. 4) did suggest a particular type of content. The students were asked to predict what would happen to the health of local residents if a volcano continues to erupt. The content is essentially "environmental conditions can have a strong impact on the health of humans," or, at a more abstract level, "all living organisms interact with their environment, and these interactions determine change in the organism."

Even though process activities must of necessity contain some reference to content, it is possible to design interesting, fun process activities with meaningless content, and herein lies the major criticism faced by many programs for the gifted in the past. The content of many process activities did not possess the richness, significance, and organization, or sequencing that was necessary to develop an understanding of academic disciplines while enhancing thinking skills. Many times I have tried to defend the familiar activity to develop and test creative thinking "What are all the uses you can think of for a tin can?"

Let me hasten to add that I believe in the usefulness of such activities. They can be very valuable as warm-up exercises to "get the creative juices flowing" and develop or measure divergent thinking without penalizing individuals because of their lack of information about a particular topic. However, such activities should not form the basis of a program for the gifted, nor should they constitute a majority of the activities in a classroom for gifted students. We should instead be designing activities that will serve the dual purpose of developing divergent thinking and other thinking skills and developing an understanding of major ideas and theories in the chief branches of knowledge. Following are some examples of teaching activities using meaningless content followed by the same process used with content that meets the requirements for appropriate content for the gifted.

Example #1

This example uses Parnes's (1967) Creative Problem Solving approach. A problem situation is either presented to the students or identified by them. The group and/or each individual goes through the identified steps to reach an acceptable solution.

Problem Situation A. Mrs. Gonzales has been having repeated visits from various religious groups who send individuals out to talk with people about their church and its viewpoints. She does not feel that she has time to talk with these people, and is not really interested. However, they are very persistent, and she is having a difficult time being rude to them.

1. Fact-Finding. List the facts that are known about the situation. List the information that needs to be known in order to develop a solution. Discuss possible sources for the unknown information.
2. Problem-Thinking. Identify the underlying problem in the situation. Analyze the information and identify a problem which, if solved, would provide a solution to the major issues.
3. Idea-Finding. List as many possible ideas as you can think of for solving the problem. Use the rules of brainstorming and defer judgment or evaluation. Focus on quantity rather than quality of ideas.
4. Solution-Finding. Choose criteria for evaluating the ideas. Apply these criteria to the ideas to choose the best solution. Examine the ideas to see which ones could be combined or modified to make them more useful.
5. Acceptance-Finding. Develop a plan for implementing the solution chosen. Consider all audiences who must accept the solution, make plans for answering their questions, and decide how to convince them the solution is appropriate.

Problem Situation B. Several years ago, there was a series of riots in the maximum security prison in Santa Fe, New Mexico. Many prisoners were killed by other prisoners and several guards and workers were also killed. Much damage was done to the prison as well. Since that time, the state legislature and other officials in the State of New Mexico have been struggling with the issue of whether to build another prison or to develop a new reform system, and what kind of prison or system would be needed to prevent problems such as these.

1. Fact-Finding. List the facts that are known about the situation. List the information that needs to be known in order to develop a solution. Discuss possible sources for the unknown information.
2. Problem-Thinking. Identify the underlying problem in the situation. Analyze the information and identify a problem which, if solved, would provide a solution to the major issues.

3. Idea-Finding. List as many possible ideas as you can think of for solving the problem. Use the rules of brainstorming and defer judgment or evaluation. Focus on quantity rather than quality of ideas.

4. Solution-Finding. Choose criteria for evaluating the ideas. Apply these criteria to the ideas to choose the best solution. Examine the ideas to see which ones could be combined or modified to make them more useful.

5. Acceptance-Finding. Develop a plan for implementing the solution chosen. Consider all audiences who must accept the solution, make plans for answering their questions, and decide how to convince them the solution is appropriate.

In this example the process is exactly the same for both situations. Groups and/or individuals complete the steps, and the teacher either leads them through the process or assists them in it. However, the complexity of Situation B is much greater as is its signficance for our social system. Students can conduct research into many important issues while attempting to solve this problem, and must deal with more abstract ideas that have a certain richness in their ability to stimulate thought. Although Situation A can certainly serve as a warm-up, and can be used to teach students how to use the creative Problem-Solving Process, the content of the majority of problem situations presented to gifted students should be of the type illustrated by Situation B.

Equally important, however, is the planning of teaching activities around a central idea or theme -- a "big idea" or generalization that brings continuity and organization to the concepts and information that are presented or taught to gifted students. Problem Situation B could be one of several activities designed to develop an understanding of a bigger idea such as "Every society has had rules, written or unwritten, by which social control over the people's conduct is maintained."

Example # 2

In this example, Williams's (1972) Strategies for Thinking and Feeling, especially the strategies of attributes and provocative questions are used as the process approach. In each case, a sample list of teacher questions is included.

Question Sequence A

1. List all the qualities of this ballpoint pen.
2. How would a caveman react to this pen?
3. How is this pen like a tomato?
4. What would happen if suddenly all the ballpoint pens in the world were destroyed?

Question Sequence B

1. List all the qualities of living things.
2. List all the qualities of non-living things.
3. In what ways are living things different from non-living things?
4. In what ways are living things similar to non-living things?
5. How would/does a tree (living thing) react to a sidewalk (non-living thing)?
6. What would happen if an object or item were discovered which had the following characteristics: (Describe some of the characteristics of living things and some of the characteristics of non-living things.)?

As in the first example, question sequence B provides and requires more significant content although sequence A can be used as a warm-up exercise and a way to develop familiarity with divergent-type questions. The process objectives are similar in both situations. Sequence B can be even more appropriate if it is part of a group of activities designed to develop an abstract concept such as "Patterns of regularity exist in our physical and living environments. Discovering, measuring describing, and classifying these patterns is the business of science."

Summary

If programs for the gifted are to survive in the 80s, educators must devise acceptable answers to some of the criticisms of our curriculums. We must be ready with defendable answers, and must clearly show how we are making our programs connected to, but not repetitive of the regular curriculum. Teaching activities must be as significant and as meaningful as possible, and we must be able to demonstrate success in both the development of reasoning skills and the development of deep insights into important ideas. Integrating high-level content with processes that develop higher levels of thinking is one way to achieve these goals.

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Books Recommended for Follow-up of Ideas

Gallagher, J.J., Teaching the Gifted Child. Boston, MA.: Allyn and Bacon, Inc., 1975. (Available from Allyn and Bacon, Inc., 470 Atlantic Avenue, Boston, Massachusetts, 02210)

This book provides an introduction to programs and curriculum ideas/strategies for the gifted. It is divided into five sections: (1) The Gifted Child and His School discusses definitions, identification, characteristics, and the interaction of gifted students with the school program; (2) Content Modifications for the Gifted presents ideas and concepts, as well as methods, that are appropriate for a curriculum for gifted students in the areas of science, mathematics, social studies, and language arts; (3) Stimulation of Productive Thinking covers problem-solving strategies and the development of creativity; (4) Administration and Training for the Gifted discusses models for organization/administration of programs for the gifted and appropriate staffing of such programs; and (5) Special Problem Areas includes information about gifted underachievers and the culturally different gifted child. Jim Gallagher writes in a very clear, interesting, readable style, and he presents many practical ideas for teaching that integrate content and process in ways that are recommended in this paper.

Maker, C.J., Curriculum Development for the Gifted. Rockville, Md.: Aspen Systems Corporation, 1982. (Available from Aspen Systems Corporation, 1600 Research Boulevard, Rockville, Maryland, 20850)

This book provides an overall framework for the development of a comprehensive curriculum for gifted students. It is divided into three sections. The first, general principles of curriculum development for the gifted, contains chapters on content, process, product, and learning environment modifications of the regular school curriculum to make it more appropriate for the gifted. Included are explanations of the principles as well as examples of how they can be implemented. The second section, developing your own program, includes a discussion of general considerations in curriculum development, a step-by-step plan for developing a curriculum for the gifted, methods for adapting the curriculum for special populations of the gifted, and methods for developing individualized programs. Integrated approaches, the final section, presents curriculums from four programs for the gifted (early childhood, elementary resource room, middle school, and high school) that have been implemented and field tested, and which are examples of the use of the general principles and processes advocated in the book. The book is clear and readable, presenting many practical examples of the concepts discussed.

Maker, C.J., Teaching Models in Education of the Gifted. Rockville, Md.: Aspen Systems Corporation, 1982. (Available from Aspen Systems Corporation, 1600 Research Boulevard, Rockville, Maryland, 20850)

In this book, ten teaching-learning models commonly used in and advocated for use in programs for the gifted are analyzed and described. The chapter on each model includes a discussion of assumptions underlying the model, elements or parts of the model, the modifications of the basic curriculum addressed by the model (this refers back to the general principles presented in section one of Maker's curriculum development book), and suggestions for modifying or adapting the model so that it is more appropriate for use with the gifted. Each chapter also contains information about how the model was developed, research on its effectivenss, and a discussion of its advantages and disadvantages. Many examples of teaching activities and materials are included in each chapter, along with charts for quick comparisons of the models. A beginning chapter discusses the role of teaching learning models in curriculum development for the gifted and briefly reviews the general principles of a curriculum for the gifted. A final chapter discusses how the models can be evaluated, adapted, and combined in the development of a comprehensive plan. The models included are the following:

Benjamin Bloom and David Krathwohl: The Cognitive and Affective Taxonomies
Jerome Bruner: The Basic Structure of a Discipline
J. P. Guilford: The Structure of Intellect
Lawrence Kohlberg: Discussions of Moral Dilemmas
Sidney Parnes: Creative Problem Solving
Joseph S. Renzulli: The Enrichment Triad
Hilda Taba: Teaching Strategies Program
Calvin Taylor: Multiple Talent Approach
Donald J. Treffinger: Self-Directed Learning
Frank E. Williams: Teaching Strategies for Thinking and Feeling

WHAT IS IT TO BE AN EXPERT?

Michael I. Posner

How do we identify a person as exceptional or gifted? One aspect is truely expert performance in some domain. An adult or child who composes music, runs extremely fast or scores particularly high on academic achievement tests may be said to be gifted or exceptional. Only in the last dozen years or so has experimental research in cognitive psychology and related disciplines begun to understand what is required to be expert in some domain.

Expert Performance

How did we arrive at this understanding of expertise and what implications might it have for understanding the nature of giftedness or exceptionality in children?

One of the most striking examples of experimental research into exceptional performance attempts to explain the ability of people to perform exceptional feats of memory. A very simple traditional memory test is to repeat back the digits that you hear as accurately as possible. The average college student is capable of repeating about eight of these digits. Memory experts, however, often repeat twenty or more digits. What is the basis of this exceptional memory on the part of people who are especially expert? William Chase at Carnegie Mellon University (Ericsson & Chase, 1982) trained two normal people to remember a sequence of random numbers, so they could repeat it back immediately after presentation. The best subject after 250 days of practice was capable of repeating random digit spans as long as 80 items in length. He did so by a relatively simple technique. He grouped the digits into chunks of three or four digits based on what he thought was a codable, running time. Or as Chase puts it, "What S.F. did was begin mentally to encode three and four digit groups as running times for various races. For example, he remembered 3, 4, 9, 2 as 3 minutes, 49.2 seconds, near the world record time for runing a mile." These chunks, then, could be grouped into higher level chunks, and finally when asked to recall, he was able to organize a recall of a very large number of digits where each chunk had only 3 to 4 digits in it. Chase was able to train other expert memorizers in very much the same way. These experts showed normal spans if the items were shifted from digits to letters. In other words, Chase found that what appears to be a very exceptional, perhaps a photographic memory, could be obtained presumably by any normal person whose practice was sustained over many days and who applied a systematic method of coding information in memory.

There is some evidence that even the increase in memory span which occurs between the ages of five and adulthood, from about 2 or 3 items to 8 items also depends on specific learning. Most people believe that the memory span increases because the capability of storing information changes from childhood to adulthood.

Chi (1975) reasoned that the change in memory span might result from the child simply learning more about how to code and recognize letters and digits. Compare a brief exposure to a list of 8 arabic digits with a list of 8 Roman Numerals. The Roman Numerals are certainly familiar but they take time to name and thus, your ability to code a number of items in a fixed exposure time is reduced. The studies of Chase and Chi indicate how important specific long continued experience is for expert skill.

Striking evidence on the nature of expertise arose from studies of chess which began nearly 25 years ago when a famous Dutch chess master, Adrian De Groot (1966) began to study the intellectual capabilities and coding processes of chess masters compared to less expert chess players. He began his study of expertise by the use of protocol analysis. That is, he attempted to have chess masters, expert and novice players speak aloud as they selected a chess move. He then analyzed in detail the depth to which they searched the board, their use of various heuristics (e.g., capture the center of the board) and other aspects of their thought processes. He found relatively little difference between people who were only fair chess players and people who were chess masters. A striking thing was that the chess masters picked the right moves but there was nothing in the protocol of their thought processes that seemed to indicate why it was that they were so much better than experts.

Next DeGroot did an interesting thing. He required each of the players to reproduce a chess position after a 5 second exposure to a slide of the 20th move of a chess master's game. These were games with which all the players were equally unfamiliar, but they were the type of game that might be played by masters. He found the differences in memory were striking indeed. Chess masters could reproduce nearly all the pieces on the board with few errors. Whereas, chess experts and novice players had much poorer performance. This work has been replicated many times with chess players and had been found in other forms of expert performance.

Chase and Simon (1973) studied in detail some of the mental processes involved in this memory performance and unsurprisingly, they found much of the same thing as in the study of expert memory. They found that the reproduction consisted of chunks of information which represent units in the chess board. When either the chess masters or the expert players were required to produce a meaningless chess position, that is, ones that had been scrambled, their performance was very much reduced and about equivalent. Chess masters, very much like the memory expert were good in the specific domain of meaningful chess position. They did not show a greater memory in general, but only in this specific domain.

Cognitive psychologists suppose that there are some domains where nearly everyone becomes an expert much like the chess master. Consider reading English words. We all have had many hundreds of hours' experience with reading. We can do so effortlessly, essentially automatically. Yet it is a very formidable achievement. A very brief exposure to a set of letters produces a representation of the particular word which was seen. In the expert reader words are handled so well that letters seen within a word are often more visible than the letter is by itself. Reicher (1969) exposed subjects to either four letter words (e.g., WORD) or individual letters (D). These were followed by a mask so it became very difficult to see the words or letters. He then gave each subject a forced choice between two letters (D or K) that both made perfectly acceptable English words. Thus, they could not guess based on their knowledge of the English language, but they still did better when the letter was in a word than in isolation. Thus, some of the same impressive coding and chunking feats that are features of expert chess players are also present in those of us who may be less generally gifted when we have been exposed to a sufficiently large number of trials to allow the performance to become truely automated.

Skill Acquisition

Herbert Simon (Chase & Simon, 1973) has reasoned master's level chess players have spent 10,000 to 20,000 hours staring at chess positions. To put this in perspective, the student who spends 40 hours a week for 33 weeks spends 1320 hours a year studying. Imagine spending more than 10 years in college studying one subject, chess, and you get some appreciation of the time commitment of master's level players. As a result of such extensive study, they are believed to store from 10,000 to 100,000 different chess patterns. Simon concludes that it is reasonable to assume that a chess master can recognize 50,000 different configurations of chess which is not too far different from the number of different words that an English reader may be able to recognize.

Fortunately, we now know something about how information is represented in the memory system during learning (Anderson, 1983). Consider learning a set of statements such as "a doctor is in the bank", "a fireman is in the park", "a lawyer is in the church", "a lawyer is in the park". This set of sentences can be represented in terms of a propositional network. What is important is that the concept "lawyer" is related both to its location in the church and its location in the park. There are two relationships stemming from the same concept.

How do we know the structure of the memory? One clue is that the more items that are associated with a particular node the longer the time it takes to retrieve any particular item. Thus, experimental studies having subjects learn relationships of this sort and asking them then to answer as quickly as possible such questions as "is there a doctor in the park?" show that the time to answer any question is a function of the number of relationships stemming from any one node.

This finding suggests that propositions about lawyers are tied to a single concept node in memory. Clearly there is a paradox -- the more items attached to any one node, the longer the retrieval time and yet, experts do not necessarily take longer to retrieve information. In part, this paradox is overcome by the long practice which is associated with becoming an expert. The reaction time for retrieving information improves with practice and comes to be independent of the number of propositions attached to a node. The expert must also unify the stored information into a meaningful whole that allows it to be retrieved more rapidly. Usually, we do not ask the exact question but a question that might be inferred or thought to be consistent with what we know about the information. Experimental studies suggest that when subjects are required only to say whether information is consistent with what has been learned, the more information they have about the context, the more quickly such information can be rejected. This may also be a way in which the expert can quickly answer questions which would require a study of the individual stored information on the part of non experts. These studies of memory representation after long training may begin to give us methods to assess and guide the training of expertise.

Expert Systems

Our understanding of the specific nature of human expertness has progressed far enough so that we are beginning to see the development of artificial computer based systems which are able to achieve some of the same performance as the expert. These systems take advantage of the fact that digital computers are general purpose processors of symbols. There now are methods for representing information in symbolic data structures, manipulating these structures and heuristics for searching through them (Duda & Shortcliff, 1983). Some of these expert systems are being put to use in tasks like deciding which antibiotic to prescribe, geological exploration and testing pulmonary functions.

These findings about the importance of representing information in memory for understanding expert performance have been embodied in these computer systems. In a recent article, Duda and Shortliffe say:

> "The early hope that a relatively small number of powerful general mechanisms would be sufficient to generate intelligent behavior gradually waned. When significant problems were addressed, it was often discovered that problem independent, heuristic methods alone were incapable of handling the sheer, combinatorial complexity that was encountered. Similarly, general problem solving techniques confronted in precisely stated "problems", "uncertain facts" and "unreliable axioms" were found to be inadequate to the task.
>
> When it was asked how people were able to devise solutions to these problems a frequent answer was that people possess knowledge at which the programs were wholly innocent. This

> knowledge is employed in a variety of ways...in clarifying the problem suggesting the kinds of procedure to use, judging the reliability of facts and deciding whether a solution is reasonable."

The growing recognition of the many kinds of knowledge required for high performance reasoning systems changed the shape of AI research. In the words of Goldstein and Pappert as quoted by Duda and Shortliffe:

> "Today there has been a shift in paradigm. The fundamental problem of understanding intelligent behavior is not the identification of a few powerful techniques, but rather the question of how to represent large amounts of knowledge in a fashion that permits their effective use and interaction. The current point of view is that the problem solver, whether man or machine, must know explicitely how to use its knowledge. With general techniques supplemented by a domain specific pragmatic know how. Thus, we see AI as having shifted from a power based strategy for achieving intelligence to a knowledge based approach."

Individual Ability

The burden of this work on expertness is a hopeful one. Ordinary people seem to have within them the potentiality for expertise should they be able to acquire the large technical vocabulary and make the long commitment of study that such expertise requires. But this can hardly be the whole story. When we have the insight that children are gifted or exceptional we suppose not just that they are experts in some domain but that they have the capacity to acquire expertise in many domains more quickly than others who may not be able to acquire at all. The studies that I have presented so far do not support this insight, but there are other studies which do.

Lyon (1977) studied the very same memory span tests that I referred to in the work of Chi and Chase. Lyon studied normal adults who differ widely in their memory span. Memory span is a skill which is highly correlated with the overall scores that people obtain in intelligence tests. Lyon wished to know what is the basis of these individual differences. The burden of the studies of Chi and Chase would suppose that they must lie in either overall experience or some specific strategy such as chunking or grouping material. Lyon induced several specific strategies in his subjects and their performance greatly increased. However, the individual differences remained pretty much the same. The strategies, although important, did not erase the seemingly more basic differences among individuals.

Most of us maintain an intuition that there are important underlying differences among people in how well they could develop expertise. Even within individuals it is hard to believe that there is not more potential for the development of some capabilities than others. Some people seem to learn music easily but have trouble with languages, while others acquire mathematics effortlessly but do poorly in mechanical ability. A hundred years of testing of intelligence by psychometricians is based on an effort to build a measurement technology based upon this intuition.

While the psychometric approach to intelligence testing was not related to any theory of intelligence, more recent efforts by cognitive psychologists (Hunt, 1983) are based upon the theory of symbolic representations I have been discussing. They seek to measure cognitive processes in various domains. It seems clear that some people are systematically faster than others in retrieving the names of letters or words, in performing mental operations on visual images and in comprehending written and oral words. The ability to find consistent individual differences in the speed of information processing and the correlations often found between this speed and psychometrically measured intelligence have led some (Jensen, 1979) to argue that we now have clear measures of fundamental mental operations that are culture fair and that give us a more direct approach to the efficiency of the neural systems underlying cognition. Indeed there are some impressive results tieing studies of speeded processing in normal and brain injured humans that suggest deep ties between the performance of elementary mental operations and brain function, particularly in reading (Coltheart, 1982).

Yet I remain very skeptical that the measurement so far achieved can be thought to be free of reflection of past learning in any fundamental sense. Remember that Chi found that improvements over 15 years in speed of recognizing digits could be based on experiences that influence even this fundamental measurement of memory. It can be argued that many of the tests employed to study elementary operations similarly reflect past experience with symbols, training in maintenance of alertness and in conforming to the experimenter's goals.

The problem of producing an expert may be not so much in selecting someone who has special capability but to create and maintain the motivation needed for the long continued training. Whether someone will work hard is itself a possible basis of individual differences. Only motivated people might undergo the long training necessary to become a chess master. Perhaps we should be using these new cognitive tests of mental operations to determine which domains of material seem to be the most promising for a given individual. Understanding that these may be properties not only of innate abilities, but of interest in the field. From this perspective it will be important to assess motivation as well as capability of learning within any domain. Tests of speed of mental operations may also help us assess the structure obtained at any level of practice and guide the exercises needed to aid in the development of expertise.

Summary

We began this paper by noting that there is now a cognitive science related to the representation and execution of expert performance. This science has developed a technology in the form of programs for performing tasks which formerly were done only by experts. While this technology is still primitive, it represents an important contribution of fundamental research on the nature of representation of information in memory. Behind this technology is a better understanding of what it means to be an expert. Expertness lies more in an elaborated semantic memory than in a general reasoning process. Such knowledge is present, not only in the performance of unusal people, but for skills like reading, is widely distributed in all of us. We are beginning to understand the nature of the propositional network that underlie such representation. The expert has available access to the complex network system of this sort without any conscious representation of the search processes that go on in its retrieval.

Despite the overwhelming emphasis in the recent cognitive literature on the ability of any person to achieve expert performance with practice, there is still considerable evidence in the literature that individuals may differ in overall ability or particular abilities. Our new knowledge about the nature of expertness should suggest ways in which these basic capabilities and interests may interact with the acquisition of information in the production of expert performance. Perhaps they will also give us method for sustaining the necessary motivation to achieve truely expert performance.

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IDENTIFICATION AND INTERVENTION IN EARLY CHILDHOOD

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The schools, these days, are being deluged with a kind of public attention that comes with stormy times -- attention that is both confused about its goals and close-handed about its commitment. Historically, the cycles of concern for improvement in education came with an industrial revolution, a great depression, a world-wide war, and the emergence of a bear of a country who seemed to threaten us. Currently, the winds of portend blow from West and East. There is a perceived military threat from the Soviet Union, with whom we must catch up, and an economic threat from Japan, with whom we must compete in world markets. Without denigrating the importance of literacy and purpose in a democracy, I would like to focus on the children, whom we ought to be thinking about, and their right to a life of learning.

The quality of learning children do in schools should become a little better each decade, because of what we discover about learning and teaching. The education of all children ought to be a national priority in time of affluence and national prestige, as well as in times of national crisis. During this current climate of reform, the special attention given to especially capable students will include very young children. This will occur, in part, because of the rapid conceptual development that has been found to occur during the early years and, in part, because the enduring effects of early cognitive stimulation has been demonstrated. Those of us whose particular responsibility is early education welcome this new high in attention to the gifted and bright among our children.

One of the first questions that arises in this context is, "Why would one want to identify giftedness in children so young?" The argument against early education dates to Rousseau, about 1750, who believed that children could not think abstractly until seven or eight and could not think logically until eleven or twelve. But those who still follow this argument do so on philosophical grounds, rather than from the evidence on learning research. These modern disciples usually fail to mention Rousseau's view that children (ideally) learn their letters at home from spice jars and other labels and learn to read from story books, under the tutelage of an idealized mother-teacher.

Intervention strategies, aimed at early cognitive development, often cite Hunt (1961) and continue with Bloom (1964). This paper will bypass a review of the learning research of the 1960's and 70's to focus on the literature about talented and gifted groups, drawing from data-based conclusions about early identification. Four topics are included: a rationale for early intervention, the heterogeneity of precocious youngsters, criteria for early identification, and a discussion of some do's and don'ts of early intervention.

Rationale for Early Intervention

Without identification, including a profile of intellectual strengths and relative weaknesses, a learning environment that is appropriately adjusted is not possible. The feasibility of identifying cognitively advanced children as young as three years has been researched and documented by Robinson, Roedell and Jackson (1979). When based on the learning characteristics of the individual child, special programs have positive, long-term consequences (Robeck, 1968a). There are compelling reasons for arranging appropriate learning environments for the precocious child, as early as the preschool level and no later than the first grade. Among the reasons for early intervention, at least three are very important: (1) the problem of continuous motivation for school learning, (2) the need for parental involvement, and (3) the difficulty in later identification of children from certain cultural and racial minorities.

Motivation for School Learning

Interest, enthusiasm, and motivation for learning are attitudes observed in most kindergarten and first grade children. Yet this spontaneous response to schooling is short-lived in a high proportion of intellectually gifted children for whom much of the school environment quickly turns stale and repressive. The mainstream curriculum, which may have an appropriate balance of familiarity and novelty for more typical children, has been largely mastered by the gifted child (Gallagher, 1975). Even when new content is introduced, this is learned so quickly by most intellectually advanced students that their interest wanes while the majority of the class completes the prescribed lessons. An example is Mark, who at age seven worked his way through eight second grade readers, while perusing Encyclopedia Britannica during his off hours. The teacher's justification has been heard in numerous situations with only slight variation, "I'm sure he could read a harder book, but he'll get those in the third grade, and why push him!" Although some gifted children are not good readers, imagine the punishment for Mark: hundreds of literal comprehension questions, pages of compound words to divide, countless CVC and VC vowels to diagraph, and excessive numbers of yes/no items to circle! The point is that five to ten percent of our primary age children, at least, are being subjected to an academic phenomenon called "pressuring from above" (Press & Robeck, 1965).

Unless teachers have special training in screening their classes for gifted students, approximately forty percent, two of five gifted pupils, are not suspected of being significantly above average. Some of these highly intelligent children are shy, or overly conforming, or untalkative. Some have eye-hand coordination that matches their chronological rather than their mental age and their writing is sloppy, some are phonetic spellers, some are lazy. In a culminating assessment of students who had been in special classes for the fourth through the sixth grades, their teachers described them as difficult to motivate and wanting to go their various directions (Robeck, 1968b). Interviews with underachieving gifted students in junior high school revealed negative attitudes toward school, disinterest, and lack of motivation (Bachtold, 1967). For some, the most highly gifted, school from the beginning was not challenging enough to generate the affective components of motivation -- those feelings of pleasure that are associated with accomplishment following genuine effort.

Early identification and intervention are important for all students whose school environment fails to command effort, and for all whose home environment fails to nurture special interests and talents. Most of the persons who achieve eminence as adults found their special interests in childhood, whether in art, science, mathematics, or literature (Goertzel and Goertzel, 1962). Talent may show itself early, but only when the opportunity is there to explore and to experiment. Those who would delay identification until upper elementary or middle school years suggest a more comprehensive base for selection than a simple IQ. Their criteria for a special program is often limited to those who demonstrate high motivation and creative ability in addition to high intelligence (Renzulli, 1977). Quite obviously, the motivation and the creativity may appear only in learning environments that nurture these attributes. Identification at kindergarten or primary levels enables teachers and parents to generate a variety of interests in gifted children and to provide a learning environment that sustains motivation.

Parental Involvement

The participation of parents is essential in supplementing and enriching the child's educational experience. Their cooperative relationship with the school is more readily established during the primary years than at any later period in the academic life of the child. Further, parents are in a good position to screen the cognitively advanced child, prior to school entrance, for referral and further testing. They may also seek appropriate preschool enrollment, early admission to school, or talent development classes available in the community, such as music, gymnastics, dance, or painting.

Parental success in identifying gifted youngsters is varied, but, like teachers, parents can learn the signs of early precocity. Often they notice if a child is cognitively more advanced than older siblings or children of similar age down the block. Parents may not be effective in precise predictions, such as an IQ score, but they should be alerted to some of the characteristics that call for different kinds of educational experience. Parents can cue the teacher to further explore their child's special needs. Some early behaviors to note are the following:

Advanced speech. The developmental stages for speech acquisition are known (Moskowitz, 1978). The spontaneous use of two or three word sentences during the second year of life would be considered unusual linguistic advancement.

Complex vocabulary. Early generation of class words, rather than merely naming things, is significant if it occurs during the third and fourth years. Classification concepts (mammals, musical instruments, tools) and multisyllable words are common in the vocabularies of many youngsters who are academically gifted.

Representation of details. When drawing people or animals, they elaborate by including features not typically noted by most children their age. Advanced three or four-year-olds can tell, before they start a picture, what they are going to draw, as distinct from deciding mid-way what the picture will be or changing the content, while painting, in response to some perceptual diversion (Luria, 1976).

Interest in numeration. Children with unusual potential for mathematics, given the opportunity, show early interest in counting, number identification, and number relationships. The child may enjoy counting by 2's and 10's or discover that there are several ways to make six. They may learn to tell time and locate special days on the calendar.

Puzzles and games. The highly intelligent preschool child often learns parlor games from older friends or siblings. Some enjoy checkers, chess, cards, or monopoly. Some design elaborate constructions from logo, blocks, or tinker toys. They may show a fascination for maps, jigsaw puzzles, block designs, and various activities which require problem solving in two and three dimensions.

Early reading and writing. Various studies, conducted over the past five decades, have shown that relatively small percentages of gifted children read before they enter first grade. Terman (1925) reported that nearly half of his gifted group had learned to read before first grade. By using a criterion of 130 IQ, Cassidy and Vukelich (1980) reported 17 to 23 percent of their subjects could read upon entering kindergarten. The advent of Sesame Street and the increase in numbers of children attending preschool has not increased preschool reading appreciably, according to their research.

Early reading is not, of itself, an indicator of giftedness. Durkin (1966) reported an IQ range from 82 to 170 among children who came to first grade with word recognition skills. Early reading might be an adequate criterion for temporary placement in a special reading group, but commitment to a long-term program for gifted students requires more than parental screening or early reading, and at least one standardized intelligence test.

Most parents of intellectually gifted children want to fulfill their responsibility toward their child, whom they seek to guide but not to pressure. The challenge is to help the child accept his or her uniqueness among peers, while remaining open to the exploration of new interests and goals.

Inclusion of Minority Groups

Identification at an early age is the only way that highly intelligent children from many poor homes and certain ethnic groups can be found and educated fully. When screened at age five by a culturally unbiased instrument, such as the Kindergarten Evaluation of Learning Potential (KELP), native Indians contribute equally to the numbers of superior students (percentiles 7-9). During my three years with California Project Talent, a continuous effort was made to identify appropriate numbers of black and Hispanic children for the special projects. Those programs which screened no later than second grade, by teacher observation, and identified by the WISC were much more successful in identifying both ethnic groups than those programs which screened at the fourth grade or later by group tests.

Heterogeneity of Precocious Youngsters

Heterogeneity, the quality of dissimilarity, is apparent almost immediately when groups of cognitively advanced children are brought together for instruction. Also, a psychological assessment of a potentially gifted child is characterized by unevenness among his or her abilities. Children judge their own abilities against the behaviors of siblings in the home and peers in the preschool. Part of their affective growth requires the development of a concept of self which assumes, "This I am good at" and "not so good" at certain other skills. The child makes experiential judgements in relative terms, often identifying particular weaknesses based on self comparison with particular strengths.

The profiles of the Wechsler Intelligence Scales, (WISC, 1974 and WPPSI, 1967) are validated indicators of intellectual strengths and weaknesses within an individual. By comparing the child's subtest profile with a parent's checklist of behaviors and interests, the professional teacher or consultant can look for clues to planning the child's program.

The different forms that heterogeneity may take are numerous and appear to extend beyond the differences to be expected from their experiences alone. Robinson, Roedel, and Jackson (1979) emphasized individual differences in problem-solving styles. Wechsler (1967, 1974) developed separate intelligence quotients (IQ's) for Verbal and Performance (non-verbal) Scales which are quite discrepant in some children. Guilford found a separation between convergent thinking, or finding a single correct answer, and divergent thinking or creating a solution based on problem recognition, fluency, flexibility, or elaboration (Guilford & Hoepfner, 1971).

Recently the advances in brain research have suggested individuality in developmental rates for functions dominated by one hemisphere while the other hemisphere supports and monitors the function. Linguistic abilities, a left hemisphere dominated function in most persons, may be quite responsive to an early environment which is rich in speech communication, reading and writing. Spatial interpretation and problem solving, a function usually located in the right hemisphere and contralateral to speech interpretation, may be responsive to a more divergent environment, but that is an hypothesis which requires further investigation. Individual differences in the development of verbal versus spatial abilities have special implications for learning. (See citations under Additional Reading.) Those who conduct the programs must decide whether to extend a child's preferred mode of exploration and problem solving or strengthen the weaker mode, or both.

Criteria for Early Identification

It is self evident that the process of identification of giftedness should lead to tentative selection for a particular specialized program. Congruity between the identification instruments and the abilities to be developed is important. A temporary program, such as summer term enrichment or a talent development project of several weeks duration, requires less precision in pretesting than a long-term commitment such as early admission to school. All special groupings for purposes of instruction call for a screening step in which the larger population is looked at for inclusiveness, rather than exclusiveness, followed by a step in which further testing and more precise criteria are applied in final selection. This means that quickly administered tests, or checklists by caregivers form the basis for subsequent selection.

Early identification (preschool, kindergarten, and primary) is easier in some respects than later identification. Young children's abilities are less compounded by unevenness in academic opportunities, therefore it is easier to get at what is theoretically "native" in their intellectual abilities. The accumulative effects of disadvantaged home and school environments is less pronounced than in older students (Martinson, 1975). Also, intervention for young gifted children is likely to be planned on a broader base of intellectual enhancement than the more specialized academic programs for older students.

Early identification is very difficult in some respects because performance from one test situation to another may be less consistent than in older children. The group screening tests, widely available for school age children, are not suitable for preschool children. By kindergarten or first grade, tests are administered only in small groups and by competent teachers. The peer and self ratings, useful for later identification, are unsuitable for young children and must be replaced by the checklists of parents and teachers, who are assumed to know the child's interests. Most important of the problems of early identification is the intelligence test, which is less predictive at early ages than after the child has developed more abstract thinking abilities.

Talent and Creative Abilities

In our system of common education, parents have been responsible for the development of talent in the performing arts. Athletic ability is important, but has emerged in all geographic areas and ethnic groups through the health and physical education programs in the schools. The undeveloped talent in artistic production could and should have some early recognition in early education.

The relationship between brightness (if not giftedness) and creativity has been reported in kindergarten (Robeck and Wilson, 1967), first grade (Gilbert, 1977), elementary school (Torrance, 1972), secondary school (Getzels and Jackson, 1962; and MacKinnon, 1965). Talent development offers the students an opportunity to extend their special instruction to a larger population at very little cost for multiple benefits. The screening procedures which locate children in the gifted ranges above 130 IQ, will identify many children with the brightness of 120 to 130 which outstanding productivity in creative areas seems to require.

Multiple Screening Devices

The screening step in identification usually is a checklist, prepared especially for parent, caregiver, or teacher to nominate a child for further testing. Some well tested checklists are available: for preschool, Roedel and Robinson (1977); for kindergarten, Tuttle and Becker (1980) and Martinson (1975); for first grade, Martinson (1975); for primary, Clark (1979). Betsy Clewett, at the University of Oregon, is refining preschool checklists for parents and for teachers.

Checklists are usually supplemented by abbreviated tests, which are more objective. The *Peabody Picture Vocabulary Test* gives a quick measure of vocabulary knowledge, although it has been criticized by Hagen (1980) as limited to relatively low-level cognitive ability. Piagetian tasks on classification, seriation, and conservation indicate the cognitive development of logical thought, independent of language expression. They may be administered by teachers and are available in kits that have been researched for difficulty level (Fogelman, 1970).

The *Slossen Intelligence Test* (SIT) is a brief test which is suitable for very young children and was designed as a screening test. If an achievement test is desired, the *Peabody Individual Achievement Test* (PIAT) is suitable for kindergarten and later grades. Tuttle and Becker (1980) have published the nature and sources of these and other tests.

The *Kindergarten Evaluation of Learning Potential* (Wilson and Robeck, 1967) was designed to identify children with high ability, as well as those who need other forms of intervention. The kit, in the hands of a competent classroom teacher is highly correlated with the Binet mental age and is moderately predictive of school success through the second grade. It is recommended as a screening device for referral and possible early placement in first grade. KELP has eleven items all appropriate to the kindergarten setting and an unaided teacher. These developmental items include gross and fine motor skills, vocabulary, letter use, auditory and visual perception, block and bead designs, bolt board assembly, calendar and number relations.

Linguistic versus Spatial Abilities

Intelligence, like love, is a many splendored thing. The point has already been made that otherwise highly intelligent children may show uneven abilities when tested in ways that permit a profile analysis. Hogan (1980) emphasized that identification of gifted students should include at least four types of cognitive abilities: (1) verbal reasoning, such as analogies and classification problems; (2) abstract problem solving with minimal verbal loading, such as classification and embedded figure problems; (3) spatio-visual reasoning, such as geometric two- and three-dimensional problems; and (4) quantitative reasoning, such as number series problems. Measures designed for young children may lack the four categories Hogan requires for older subjects. However, it is not difficult to analyze those items which require verbal reasoning, as opposed to non-verbal reasoning. Block design, mazes, and embedded figures are examples of performance or non-verbal items.

The University of Washington Child Development Project used a battery of identification tests for preschool children. It included the short-form of the Stanford-Binet Intelligence Scale; the Block Design, Mazes, and Arithmetic Subtests of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI); the Numerical Memory subtest from the McCarthy Scales of Children's Abilities; and their own word recognition test of reading (Robinson, Roedell and Jackson, 1979). This battery tests both linguistic and spatial-perceptual reasoning, as well as arithmetic and reading skills. When the ceiling appears too low on a WPPSI subtest, the tester continues with the parallel subtest of the WISC.

The criteria for identification of gifted children during early childhood may be summarized briefly:

* Plan a screening and testing procedure which is congruous with the program(s) available to the children identified.

* Use screening devices which include as high a percentage of the child population as resources (personal and monetary) permit.

* Employ a battery of individual tests to cover the child's verbal, mathematical, and spatial abilities; include items which go beyond associative learning to test reasoning and higher conceptual processes.

* Give the young child ample opportunity to show his or her maximal potential through the use of alternate tests and suitable diversion between tests.

* Objective evaluation should assure that the children selected are potentially able to succeed in a special program. Schools do the child and the parents no favor by admitting children who would be more successful in mainstream classes.

Guidelines for Intervention

Programs designed especially for intellectually gifted preschool children have appeared recently (Vantassel-Baska, Schuler & Lipschutz, 1982 and Kitano, 1982). Like the University of Washington program, these programs tend to be responsive to the special abilities of the individual children in the groups. Much more program information is available for kindergarten and primary age children than for preschoolers (Rice & Robeck, 1965). Despite my reluctance to dichotomize these guidelines, space is compelling me to close this report with some cogent do's and don'ts that emerged from the kindergarten-primary classrooms that participated in California Project Talent (Plowman & Rice, 1969).

Do consider acceleration by early admission or a planned advancement during the early grades. Planned acceleration has an excellent track record in both hard-data research and program evaluation. If the identification procedures are adequate and the transition is professionally supportive, the chances are 95% or better that the advanced placement will be a better placement for the development of the child.

Don't underestimate the gifted child's ability to adapt socially, emotionally, and academically in a peer group that is older in chronological age.

Do give identified gifted children inconspicuous opportunities to work at their own level of achievement in all areas of the curriculum. They can learn quickly to prepare a bibliography, using the elementary school library. They can read more advanced science books (sometimes the teacher's manual) to set up experiments for the class. They can write math problems within the unit of study and deposit them in a box on the teacher's desk to be duplicated along with the contributions of anyone in the class. They can write book-length stories, a few paragraphs at a time, to be typed and placed in the library corner. These kinds of projects fit into the current classroom study units and help advanced children feel they are an integral part of the group.

Don't identify gifted children to visitors in the presence of pupils, "She is one of the gifted group." This admonition may seem shocking and unnecessary, but it is needed. Across the room, children know who is the focus of attention. Gifted children, by and large, want to fit in, but they often need adult cooperation if not counseling to help them.

Do make major adjustments in the skills programs. For Mark, whom I mentioned earlier, a third grade reader would be much less than an appropriate adjustment. Sixth or seventh grade books would have been appropriate, if selected for interest and social/emotional maturity. There are usually other pupils in the class, whose reading is almost as advanced as the "best" reader. They can share a set of paperback titles and they will eagerly participate in skill lessons when these are needed for the books they are reading. Reading activities they enjoy are generating rules for word recognition, drawing implications from text, and writing the theme of a story in one sentence.

Don't insist on their doing all the pages in the adopted texts or completing all the workbook pages if the skills and concepts are known already.

Do counsel the gifted underachievers by helping them (and their teacher) find rewarding materials from which they can learn. Sometimes the child's disinterest is so persistent that areas of interest will need to be explored or developed. Recognition for genuinely superior work should be given consistently.

Don't praise for minimal effort. Children know when they give little effort and can be silently contemptuous of undeserved rewards. Counseling is not, "You can do better, you have the brains!" Teacher counseling of the gifted child may consist of social reinforcement at a very intelligent level, similar to the relationship most children like to have with their teachers.

Do use some system for stimulating successively higher levels of thinking. KELP incorporates associative, conceptual, and creative levels of learning. Bloom's taxonomy may be appropriate if the lower levels of knowledge and comprehension are applied to curricular content. The Guilford and Torrance distinction between "finding the one right answer" versus "exploring many possible solutions" is readily understood by gifted children at an early age.

Don't phrase questions so loosely that children fail to understand whether they may "brainstorm" or whether the teacher has a particular answer in mind.

Do use direct instruction sparingly for particular skills that are lacking. The gifted child's math and reading may have been largely self-directed and informal, leaving important gaps in his or her learning. The academically talented child requires much less associative level instruction than do most children.

Don't use direct instruction when methods are available which help learners construct their own understanding. Such approaches are more effective in allowing the child to transfer knowledge to the real problems of science, mathematics, and literature.

The most important element in the gifted child's education is the classroom teacher, whose effectiveness as mentor and adviser cannot be replaced by administrative re-organization. The teacher who understands, accepts, and strives to teach the precocious learner can overcome tremendous lacks in community understanding and support.

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